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THE
COLONIAL HISTORY
SERIES
No. 77

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VOYAGE OF
H.M.S. SAMARANG
Vol. II

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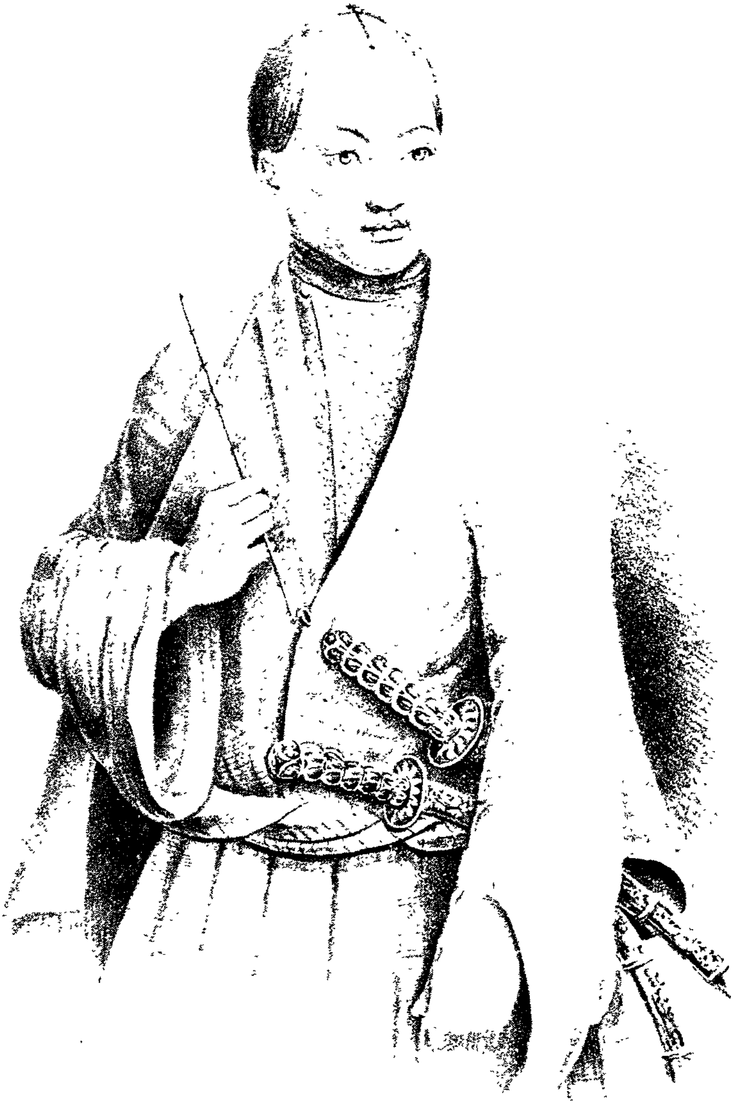

ARTHUR ADAMS AD NAT DEL.

REEVE BENHAM & REEVE LITHOGR.

Gentleman of Japan

NARRATIVE

OF THE

VOYAGE OF H.M.S. SAMARANG,

DURING THE YEARS 1843–46;

EMPLOYED SURVEYING THE ISLANDS OF THE EASTERN ARCHIPELAGO:

ACCOMPANIED BY A BRIEF

VOCABULARY OF THE PRINCIPAL LANGUAGES.

Published under the Authority of the Lords Commissioners
of the Admiralty.

BY

CAPTAIN SIR EDWARD BELCHER, R.N., C.B.,
F.R.A.S., F.G.S., &c
COMMANDER OF THE EXPEDITION.

WITH

NOTES ON THE NATURAL HISTORY OF THE ISLANDS,
BY ARTHUR ADAMS, ASSISTANT-SURGEON, R.N.

IN TWO VOLUMES.

VOL. II.

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CHAPTER XI.

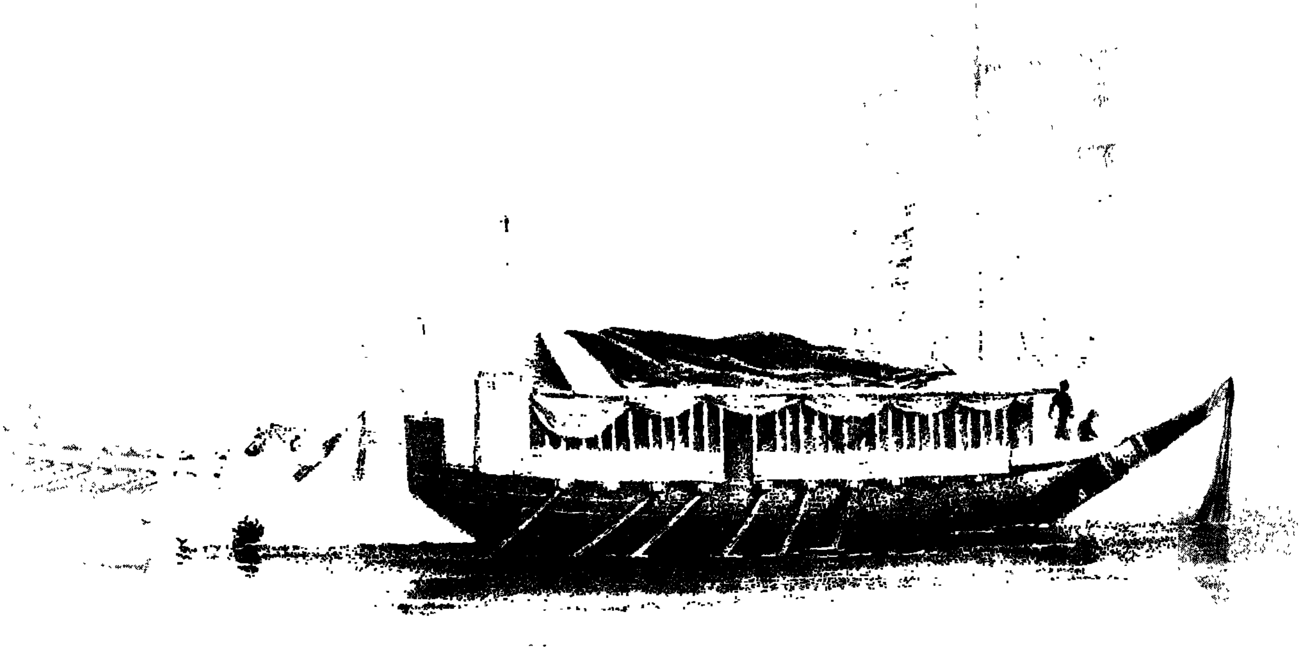
JAPAN AND LOO-CHOO.

Approach Nangasaki—Escorted by numerous guard-boats—Permission to land—Observations effected—Deputation of the Chiefs to the Ship—Numerous visitors—Japanese customs and habits—Legal suicide—Dress of superior class—Swords, Boats, &c.—Fortifications of Nangasaki—Batteries of the Cavallos—Approach the Ship — Interesting interview — Reflections on Japan and the Japanese—Extracts from the Voyage of the 'Morrison'—Leave Nangasaki—Gig swamped and loss of valuable Instruments—Arrival at Loo-Choo—Excursion into the Interior—City of Sheudi —Napa — Pootsoong—Entertained by the chief Mandarins—Ramble through the town—Japanese Ship-building—Collegiate institutions—Want of cleanliness and attention to dress—Diet—Produce of the market—Presentation of a curious document denouncing the system of Surveying.

On the 1st of August, we took our departure for Japan, steering a course for the Gotto Islands, which we passed on the night of the 5th August, and then shaped our course direct for Nangasaki, with the hope that the Authorities of Japan might be able to afford us supplies of fresh provisions, until I could ascertain from the court whether any chance existed of my being able to land, or whether they would hold out any prospect of supplies, should I find it either necessary, or politic, to repeat my visit the ensuing season. Our progress, however, was retarded by calm and variables in the morning, and it was not until 8 o'clock that a favourable breeze sprang up, carrying us slowly along the land, and enabling us leisurely to contemplate the scenery before us. The forbidding aspect of the sea features were agreeably relieved by the successful efforts of the cultivators of the soil, who carried their terraced gardens up the sides of, apparently, the most barren hills, presenting the appearance of steps to pyramids: from whence they derive water for the irrigation of these gardens, is yet problematical. As we continued to approach the Port of Nangasaki, the common fishing and trading vessels were succeeded by the gay official, or guard boats, despatched to reconnoitre so unusual a visitant as an European ship of war, and increasing so rapidly in numbers, as to afford the exhibition of a Regatta, each boat being of beautiful model, elegantly painted, and equipped with light and picturesque canvas, occasionally varied by alternate stripes of white and blue, as well as plain, and no two exhibiting the same flags,- each bearing the arms of its office or chief to whom it belonged.

The breeze continuing to freshen we soon out-sailed these vessels, but one rather in the style of a Pratique, or health boat, motioning a wish to communicate, our pace was reduced and she came alongside; the officer would not, however, come on board. He presented a small box upon the end of a staff, in which I found a letter, worded in Dutch as well as French, requesting me to " anchor near the Northern Cavallos in a convenient berth, and to remain there until further notice." Our attention was now directed towards the shores, under which we were to anchor, and if suspicion of hostilities had been uppermost in my mind, I could very readily have been persuaded that we were not welcome visitors. Every available level was apparently studded with batteries and banners, and our approach thus escorted, might have been denominated an easy capture. It was rather too great a stretch of imagination, however, to suppose that the Japanese had turned pirates, and that they had sent out a letter to seduce us into their port; independent of the futility of opening a quarrel with Great Britain. A slight glance with the telescope discovered our mistake, for these apparent lines of batteries were nothing more than calico fences, the armorial devices of which we had mistaken for embrasures.

Nothing like surprise was exhibited, everything appeared to proceed as if we had been expected, and thus escorted by the mosquito fleet, we at length reached the spot, where the harbour-master, or some such personage, seemed, by his bawling and holding up his boats' grapnel, to think, that we ought to obey his mandate, which evidently meant, anchor *instanter*. Whatever courtesy it may be proper to observe in our intercourse with remote countries, my little experience in such matters, has taught me that to yield to any inferior authority, especially of the Tartar breed, is to reduce one's own standard very materially in the estimation of demi-civilized nations; it was not my intention to do as my predecessors had done at Japan, my visit here was an experimental one, and it remained, therefore, to be seen whether I had misconstrued these people. I had proceeded hither entirely at my own risk, and upon my head would any failure most inevitably fall. Looking to their imperative letter, requiring obedience, I read, "Un ordre exprés du Governeur de Nangasaki, vous en joint de mouiller pres de Cavallos Septentrional *dans un endroit convenable*," &c. Now as I did not intend their bawling boatman to instruct me which was a *convenient berth* for my ship, near the position alluded to, I stood on until I reached the view I designed to have of the inner harbour, and relative range of the batteries, and there anchored. After waiting some time, a boat came off, and hailed us in Dutch, but as I declined having any communication in that language, she returned to the shore, leaving us with a trivial supply of guard boats. As my original communication, by the pratique boats, led me to expect an immediate visit from the authorities, I drew up a letter, by the aid of my Chinese interpreter, stating "that having in compliment to their customs, performed my part of the contract by anchoring in the position assigned by their letter, that I was quite at a loss to account for their want of attention in not waiting upon me according to their promise, and that I expected an officer of proper rank might be sent to confer with me, otherwise I should land forthwith." This letter was not despatched until near 4 o'clock, and then by an armed boat from us to the nearest guard-boat, and I did not expect a reply before the morning. To my great surprise, however, this document was promptly responded to, and a gaily decorated boat approached the ship, attended by six others,



Adams del. [illegible]

IMPERIAL GUARD BOATS, JAPAN.

London Reeve, Benham and Reeve 1848

conveying the superior officer, who waited upon me with an apology for their seeming remissness as well as to ascertain my wishes. Matters went on very satisfactorily, and before quitting the ship this chief had complied with every desire which could be conceded without reference to the Prime Minister, and arrangements were made for the ceremonial visit on the morrow, at noon. Some of my readers will, doubtless, be as much astonished as my Officers were, when I inform them that one of the concessions of these people, was, the granting permission to *land on the nearest island*, where there were only a few fishermens' huts, to obtain the necessary Astronomical and Magnetic Observations, including my remaining on shore *during the night*, to obtain the Latitude by the stars! a point obstinately refused on all former occasions; but as I informed him that this was indispensible, it was on this occasion cheerfully conceded. My interpreter was somewhat alarmed when he found that I only received this chief in undress. Siding up to me, he observed, "This man first chop Mandarin, sir, he got two sword." However, I knew a little more on the subject of *etiquette* than to imagine that any state visit would take place without due notice, and that the game I had commenced must be played out in the same spirit. This Officer, although I admit his powers were extraordinary as an *aid-de-camp*, was, nevertheless, deputed by his superior officer, and it was to that superior alone, in his proper style, I decided to advance on terms of equality. On the day following, our landing was effected without difficulty or confusion, and the Observations, up to noon, satisfactorily conducted, when I returned to the ship, to receive my guests. As I was still informed that no great personage was sent to visit me, I retained the customary undress, with epaulettes. The party consisted of four first-class Chiefs, including our visitor of the previous day, numerous second-class, and but few, in comparison, of the plain gentry. They were conducted to the cabin and between decks, and partook of refreshments, after which they preferred the cooler air of the quarter-deck, where chairs were placed for them. One very intelligent and active person, who seemed to fill the situation of secretary and linguist to the deputation, acted as the medium of communication with our Chinese interpreter, occasionally in characters, but principally *viva voce.*

The customary questions, as to the object of our visit, having been replied to, they commenced by informing me, that they had been expecting us for the last two years; that they had been informed by a Dutch vessel from Batavia, in 1843, that the 'Samarang' would visit them; and that they had also letters, through Loo-Choo, from the Meia-co-shimas, giving a full account of our proceedings in those islands, plainly telling me, however, "that it was forbidden to measure the land in Japan." That the reports were strongly in our favour, stating that we did not enter their towns, or offend their prejudices, but conducted ourselves in accordance with law and good manners, and this had warmed the Emperor's breast. They then enquired how long we intended to remain, and upon being informed not longer than three days, unless we could obtain supplies, they not only expressed themselves disappointed, but it was evident from their countenances, that some arrangement which they had made, would be disconcerted. They urged my remaining fourteen days, at the termination of which period orders would arrive from court, directing the mode of my reception at Nangasaki, and until this was duly notified, I could not land at the city, but might enter the harbour if I wished. As the thermometer at this outer anchorage stood as high as 96°, and we were informed that it was "dreadful within"! I preferred my present position, where I could enjoy the freedom of moving about in the boats in pursuit of an object which had to be effected, notwithstanding the vigilance of their numerous guard boats. The chief of this deputation, a very prepossessing person, of about 55 years of age, and excessively polite, informed me, that although we could not ourselves visit the shore, he had been instructed to prepare a list of any articles which we required, either for the ship or ourselves, and it was fully understood that we were to pay for them, as the *prices* were named for every article mentioned. Fresh meat, vegetables, water, and spars, were noted for the ship; and fruit and some minor articles for the use of the officers. There were many articles of ornament which I wished to purchase, but the reply was, "if you wait fourteen days you will have them, as they must be sent for; and if you wish any particular articles manufactured for you (Japan tables, desks, &c.,) they will be ordered, and prepared for you by your return next year, when it is highly probable that you will be permitted to land." In this I am satisfied they were sincere.

One pertinent question was asked: "Why did the English discontinue trade with Japan?" This I was not prepared to answer, but suggested that the fault might lay with their Emperor. But they affirmed that he was always well-disposed towards the English, and preferred their friendship until the departure of the 'Phaeton'. Upon this subject they appeared disposed to enter into some explanation, as they immediately referred to papers which they had with them, stating, as it appeared, minutely, the occurrences of that period, but which our interpreter either did not, or would not, understand. The termination of this affair of the 'Phaeton' appeared to be, that Bullocks were demanded for the ship, but were not produced; that men landed and took them by force, and attacked the village near the anchorage, and that she sailed, and had never returned, "which made the Emperor's heart very sore." The Chief in command was speared for his neglect.

At this interview they begged very hard that I would desist from my intention of remaining on shore to observe the stars during the night; but as I well knew that any withdrawal from my original agreement, would leave me open to a charge of weakness of purpose, I contended firmly on its necessity, in public, but gave the secretary to understand, that provided the night was clear, I might possibly get all I required before midnight. They very good humouredly assured me, that they were satisfied I would only do what was proper.

After the departure of our visitors, I returned to my Observations, on the island, but found the guard-boats' crews rather troublesome. This, continuing to increase towards sun-set, I deemed it prudent to have our armed boats in attendance. Shortly after commencing my Star Observations, much confusion, and violent altercation ensued, the guard boats, with their gaily-coloured lanthorns, exhibiting the arms or distinguishing marks of their chiefs, rapidly increasing in number, and I could now perceive that some important chief was discussing the authority by which I had been permitted to land, and remain at night. Had I remonstrated against these interruptions, I should, perhaps, have been included in their animosities. I thought it prudent, therefore, to take more notice of the stars, although the clamour very much disturbed our proceedings. Several motions made towards us, were of a suspicious nature, and one or two addresses in Japanese were, doubtless, very gentlemanly invitations to return to the ship, but my mind was made up; I understood not one word of these orations, and pointing to the heavens, gave them to understand that my attention was engaged with affairs in that direction. To say that I was easy, would not be correct, and to detail the various calculations, not connected with Astronomy, which were rapidly passing through my brain, would be impossible. The principal idea, however, was of a dramatic character, involving the figure I should assume in the event of any attempt to seize me, which some coils of very gentlemanly white cord, as introduced upon our stage, gave reason to suspect. Giving notice to our forces to be upon the alert, and the rising of our men from their state of apparent slumber, seeming to have a decided effect upon the most noisy, they saw that we were determined to maintain our ground, and, probably, came to the conclusion that it might be as well to remain quiet. Shortly after this, the principal Officers having arranged, as I supposed, the guard for the night, and retiring with the other rebel-quelling Chiefs, we were left in comparative ease.

By midnight I had obtained sufficient observations to satisfy me for the position, and as the noise had ceased, and with it the excitement, my return to the ship could not be attributed by them to any efforts on their part; I therefore retired for the night, not even followed by a single guard boat. As they had expressly informed me "that it was forbidden to measure the *land* in Japan," this mandate did not extend to the *ship* or the *sea*; and as one very stringent note of our Hydrographer clearly intimated to all Officers holding such commands, that they are to exercise their judgment in such emergencies, and that, at least, an approximation to a survey of the works of a strange place should be made, I took decided measures for effecting this object on the first instant of landing, by simultaneous observations at the land position and fore-top-mast head. This afforded me some main triangles; many other schemes were adopted for its completion, too tedious to mention, but the sounding part was very well executed by the boats employed *dredging for shells*, which they did not attempt to interrupt after they were shown some of the objects which were collected, deeming us, no doubt, great simpletons. As these boats were commanded by Officers who had complete instructions, and at certain signals from the ship had their positions well fixed, a tolerable survey was commenced, to be finished by the ship at her departure. The generality of my readers may not feel interest in such matters, but I have thought it advisable to introduce these observations, to show to those who may be similarly circumstanced, that where opportunity offers many obstacles may be dissipated by a little ingenuity of thought and determination.

On the second visit of the Chiefs, the day following they *begged very hard* that I would not repeat my visit to the island. and as I had obtained all the observations that were absolutely necessary, I consented, after considerable *intercession,* to forego what was now of trifling importance. But in doing so, it was not without the expression of my wish, to render our stay as little irksome to my friends as possible, and with the full understanding that it was a *concession* on *my part,* rather than an act of obedience to their mandate. After this I soon found a relaxation of formal etiquette; the ship was thronged with strangers, and intercourse on all sides became unrestrained. The greater part of the Chiefs begged that I would write my name, with that of the ship, upon their fans, and the two principal presented me with their duplicates, upon which their names were written by the interpreter. Upon some pretence, the three minor authorities were sent to examine the ship, leaving the old Chief and the interpreter, who upon the cabin being cleared, asked many indifferent questions, which probably were not considered proper in the presence of others. He informed me that they were perfectly aware of what had taken place between us and the Chinese, but he could not conceive how they had been brought to *pay the money; promises* he could understand, but their *fulfilment* was beyond his belief. When assured that it was in part paid, and if not paid at the time agreed on, that we should continue to hold Chusan and Amoy, he exclaimed, with a deep sigh, "England must be very powerful." He then wished to examine the strength of my arm, by feeling the muscles, afterwards exhibiting his, observing, "I am a larger man but I am very weak, the English are all strong though not large." Two of my boats crew were sent for, as if to perform some duty in the cabin; one an Englishman, about six feet two, and strong in proportion, the other a mulatto, born at Nova Scotia, about six feet, and immensely powerful; the latter surprised him amazingly, he was also one of the handsomest coloured men I have seen, and a great favorite on board. Our visitor then minutely examined every part of the cabin and furniture, and repeatedly observed, that if I wished any thing made for me, that he would have it executed by the period of my return the ensuing year; and, frequently, upon asking if they had articles similar to those noticed by him in my cabin, he replied, wait until the answer from the Emperor arrives, and then it is probable that you will be able to judge for yourself. This remark was repeatedly made by the other Chiefs, and also by the secretary, or interpreter, when alone with me. I am therefore satisfied that they believed the 'report', as they termed it, would be favourable. Wishing to make some present to the Chief, I endeavoured to fix his attention upon some object about the cabin, but he evidently avoided the subject. As they seemed to notice the tea which was provided for them, and which was of the finest quality, I took occasion to offer a small 10lb. box, of some which I had purchased for the express purpose. Verbally he accepted it, and it was put into his boat, but after he quitted, another boat was sent back with it, possibly because it had not been conveyed thither with sufficient secrecy, for I witnessed the perfect assent of the secretary himself, before it was sent over the side. It is very difficult to obtain good tea, either at Japan or Loo-Choo, and at both places they acknowledged that they were unable to obtain from China any of a quality similar to that shown to them, although they had the same character of tea.

The day previous to our departure all the articles required, were brought on board and mustered by a regular list; but in many of the names, they had made mistakes, natural in all probability to their taste, such as peaches and apricots, preserved in salt, for fruit. The small spars (for studding sail booms &c.,) were of cedar, measuring about ninety-six feet in length, by fourteen inches at the butt; a large quantity of very fine fish, but owing to the heat of the climate unfit for consumption, hogs and vegetables for the crew. Their reason for not giving us Bullocks, as they were "too tired" or, "hard worked," is worth relating. On enquiring, why they could not supply these cattle, instead of hogs, they observed "The Japanese do not eat *Cows*, they do their duty, they bear calves, they give milk, it is sinful to take it, they require it to rear their calves, and because they do this they are not allowed to work. The Bulls do their work; they labour at the plough, they get thin, you cannot eat them, it is not just to kill a beast which does its duty, but the hogs are indolent, lazy, do no work, they are proper for food." * Our specimens were probably of this breed, they did not appear like working animals, but, on the contrary, overwhelmed with their own fat, and weighing about 150lb.

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* Probably it was on the ground they could not work, that one of the Djogouns ordered all the old men, women, and cripples, to be destroyed.

Many questions were put relative to the Dutch on Desima, and as to whether any of their vessels were in port; but all questions relative to them were evaded; nor did we see or hear of any belonging to that factory. To one observation which I made, relative to the permission which we were informed, that the Dutch occasionally obtained for a day's range in the country, it was answered, simply "The English will obtain more if they are admitted to land." They were extremly inquisitive as to the Frenchmen at Loo-Choo. and distinctly asked if one was a Catholic priest. I understood the question by the gesture, and before my interpreter expounded it, desired him to say that we neither interfered with the affairs of *Dutch* or *French*, turning the tables in this instance, upon their own evasions relative to the former.

Refering to their conduct on the occasion of the visit of the 'Morrison', to return the Japanese wrecked upon the Sandwich Islands, they dismissed the question very summarily, and, as I thought, with something approaching to impatience, observing "She attempted clandestinely to break through our laws, landed contrary to law as a smuggler; and that the same practice, as that followed with respect to the 'Morrison,' was observed towards the Chinese. They had sent back Japanese, sent by the Emperor of China". He further remarked, "China has her laws; it is death for a Chinese to quit the Empire, so it is with Japan. The difference between us consists in our enforcing the laws of Japan; those of China are insigificant, and constantly infringed".

They have a college at Nangasaki, where the youth in addition to general acquirements, are taught the Foreign Languages, incluing Dutch and English, and amongst our visitors were many who spoke Dutch, and wished much to find persons on board who could converse in that language, but this the authorities did not approve of, and as we had but one, and he understood but little, he was kept out of the way.

One of the young students understood English slightly, could pronounce a few English words, and readily caught at every expression, recording it in his note book. He had proceeded so far as to write several of the names of the Officers in English, when it was probably noticed by some of the authorities; and as my readers have, doubtless, frequently noticed a dead silence amongst a collection of noisy sparrows, followed by a sudden chirrup and flight, without any visible cause, so it happened with these young students; who, without any apparent authority, hurried off very suddenly to the boats. I strongly suspect that many of our visitors were persons of high rank in disguise. The greater number wore two swords, denoting gentlemen of consideration; and from the devices or crests (in solid gold), noticed upon the hilts of those worn by one or two rather *distingué* individuals, and which I was assured were armorial bearings, and duly acknowledged amongst themselves, I was induced to draw comparisons to similar outlines of the badges on the shoulders of the attendants, who were in their turn designated as the retinue belonging to persons of high rank. Coupling their emblems with those on the swords, and the evident connection of master and follower, I had travelled rather too fast in my chain of reasoning, forgetting that discovery would very soon leave me deserted; and such was the result of my asking, if the person behind my nearest friend was one of his retainers. They did not deny it but shook their heads, and shortly after they stole away, leaving me with the old Chief. As this was our last day and the boats would continue to come until a late hour with wood, water, and other supplies, the old Chief remained until 8 o'clock, and on retiring begged that I would consent to receive him at 2 o'clock in the morning, and converse until daylight, "such being the custom of the country." To this I consented; the Chief departing, but leaving the secretary to see every thing complete before he quitted. It was clearly understood that the arrangement for payment was to take place immediately the catalogue was found to be correct; but the secretary now declared, "that it was by an express order of the Government, that every thing had been provided *free of cost*, and that it was the custom of the country. If a Japan ship goes to your country, I am sure you would do the same; the country bears the expence, it does not come out of the purse of any individual. Finally, I cannot act in the matter you wish, if I should even name it, I should be disgraced, perhaps lose my life." Drawing me to the taffarel, where no one but himself and our interpreter, could witness the conversation, he freely acquainted me with the friendly disposition of the Chiefs and great people of Nangasaki, towards the English; and their hope, that on our return the High Councillors would consent to our admission, acknowledging freely that it was within their province entirely, (not the Emperor's), and that no man could form any conception as to the view they would take. All he knew was, that kindly expressions had transpired amongst the great Chiefs about Nangasaki, and they were generally forerunners of good. Relative to the visit of the Chief, he would probably come alone, or be attended by three or four, including himself, and that they would take tea and sweetmeats. Directing the necessary preparations to be made, I took my nap, rising at two, and waiting with considerable anxiety until daylight. No one came; but the heavy rains which fell probably prevented the visit, which I construed into an official act, of seeing all correct up to the moment of sailing.

There is one peculiar feature attending this visit. On all former occasions that Japan has been visited by strangers, an edict has been issued forbidding any return. In this instance the promise to re-visit Nangasaki was received with apparent satisfaction, and the Chiefs (and it extended to the young men of family) expressed the hope that they might be able to show me their houses, and introduce me to their families. They further requested, that I would bring with me Cow-pock matter, Sulphate of Quinine, Ipecacuanha, Nux vomica, and other medicines, engaging on their part to have several little commisions executed for me. All these communications were privately made in my cabin, but duly committed to paper; I am, therefore, far from believing in such consummate hypocrisy, as to imagine for an instant that any deceit was practised, a crime in their code (as regards invitation to the return of foreigners) which might, in the event of hostility resulting, be attended with risk to their heads, or rather bowels, the crucial incision in that region being the only honourable mode of death permitted. The following account of this torture is from M. Titsingh's 'Illustations of Japan, &c.'

"Mention is so frequently made in this volume and in other works on Japan, of the privilege enjoyed by certain classes of the inhabitants, of being their own executioners, by ripping up the belly, that the reader will not be displeased to find here some particulars respecting this singular custom.

"All military men, the servants of the Djogoun, and persons holding civil offices under the government, are bound when they have committed any crime to rip themselves up, but not till they have received an order from the court to that effect; for, if they were to anticipate this order, their heirs would run the risk of being deprived of their places and property. For this reason, all the officers of government are provided, in addition to their usual dress, aud that which they put on in case of fire, with a suit necessary on such an occasion, which they carry with them whenever they travel from home. It consists of a white robe and habit of ceremony, made of hempen cloth, and without armorial bearings. The outside of the house is hung with white stuffs; for the palaces of the great, and the places at which they stop by the way when going to or returning from Yeddo, are hung with coloured stuffs on which their arms are embroidered—a privilege enjoyed also by the Dutch envoy.

"As soon as the order of the court has been communicated to the culprit, he invites his intimate friends for the appointed day, and regales them with *zakki*. After they have drunk together some time, he takes leave of them; and the order of the court is then read to him once more. Among the great, this reading takes place in presence of their secretary, and the inspector: the person who performs the principal part in this tragic scene then addresses a speech or compliment to the company; after which he inclines his head towards the mat, draws his sabre and cuts himself with it across the belly, penetrating to the bowels. One of his confidential servants, who takes his place behind him, then strikes off his head. Such as wish to display superior courage, after the cross cut inflict a second, longitudinally, and then a third, in the throat. No disgrace is attached to such a death; and the son succeeds to his father's place, as we see by several examples in the 'Memoirs of the Djogouns.'

"When a person is conscious of having committed some crime, and apprehensive of being thereby disgraced, he puts an end to his own life to spare his family the ruinous consequences of judicial proceedings. This practice is so common, that scarcely any notice is taken of such an event. The sons of all the people of quality exercise themselves in their youth, for five or six years, with a view that they may perform the operation, in case of need, with gracefulness and dexterity; and they take as much pains to acquire this accomplishment as youth among us do to become elegant dancers, or skilful horsemen: hence the profound contempt of death which they imbibe, even in their earliest years. This disregard of death, which they prefer to the slightest disgrace, extends to the very lowest class among the Japanese."

The dress of the superior class which visited the 'Samarang', nearly resembled that of Loo-Choo, being composed of very loose trowsers and shirt of fine grass-cloth, with a fine blue and white striped tunic of the same material, but stouter, the whole confined by a broad sash at the waist, in which two swords were inserted. The legs were covered with very neat stockings, of a substance very much resembling our white jean, the seam being on the anterior and posterior parts; a very slight sandal is worn, but when they found themselves at ease in the cabin, these were thrown aside and they preferred the eastern habit of drawing their legs up under them. The head is shaven from the temples backward on each side, denuding a horse-shoe space in front, with a central lock, advancing slightly before the crown. The hair is very neatly worked back on all sides with some oleaginous compound, and secured by a knot behind; no hat or other covering for the head was noticed, the fan or umbrella being mostly used to intercept the sun's rays. Their swords deserve especial notice, and amongst themselves their degrees of rank or importance are typified by the devices of the hilt. The larger one is about two feet six inches in length and slightly curved, the hilt occupying about nine or ten inches of this length, and affording an impression that it might be intended to be used with two hands. It has a circular cupped guard piece of metal, about two inches in diameter where the blade is inserted, but more for ornament than use; the knob is also of metal, probably gold. The most important part appeared to be the armorial device in gold, which is placed upon the outer side of the hilt very neatly worked over with braiding, apparently of fine hair, so as still to admit of its being clearly distinguished. This they appeared to conceal from our scutiny, and it was owing to my tracing the connexion between a young man very genteelly clad, and his follower having the outline of this same badge, worked on the shoulder of his mantle, and who attended him closely, that my party became suddenly thinned. The scabbard is of shagreen; the smaller sword is nearly a *fac simile* but with a shorter hilt. They are very handsome articles of dress, and to judge from one which I saw drawn, of excellent workmanship. When I mention the word *drawn*, my readers must not suppose that it belonged to any of the superior Chiefs, as it would be a great breach of etiquette, almost an insult, to show a naked sword; but it was amongst some of the younger branches in communication with officers between decks. The lower orders or labouring classes, appear to be of a larger, or more lengthy, build, and from their exertions, which we witnessed in their boats, of considerable power. Their boats are very neatly built, of good model, very sharp and swift. An arrangement similar to our river barges, or a light housing, is adapted to them, which completely shelters the inmates from the weather, carrying, conveniently, about twenty persons. As this construction prevents the use of oars, three large sculls are adapted on each side, abaft the beam, and the impulse is so great that their velocity equalled that of our boats, generally reckoned swift. The general length of these boats I should imagine to vary between thirty and forty feet, the extreme beam and bearing being abaft the centre, forming a very sharp wedge to the stem, which being much raised, as in the Spanish boats, gives them a very rakish appearance. The official boats carry two small banners on the quarters which denote their office, and lanthorns, with devices, by night. No person is permitted to move, by sea or land, at night, without this accompaniment, and upon the visits of the officers by day, they were preceded by their lanthorn bearer. The crews of these boats are dressed in smock frocks, with the badge of office worked on the shoulder, and glazed or japanned hats similar to those used by firemen. But those who labour at the sculls and probably are slaves, wear nothing except a pair of short trowsers, reaching about one third down the leg. Their hats, when they are covered, appear to be composed of broad leaves of the Palmetto, woven, and in some instances, of a frame work covered with paper, prepared with the paste of the sea-weed Agal Agal.

Recurring to the anchorage and the appearance of the fortifications as we entered, I shall now proceed to describe them. The outer roads of Nangasaki, or that denoted by the anchorage off the Cavallos Islands, is formed by the two thus named on the west and south, a small island in the centre of the channel, leading to Nangasaki on the east, and by a small chain of islets on the north, leaving a space of about two miles in aperture open to the north-west. All these points are more or less fortified. The Cavallos Islands are about one hundred and fifty to two hundred feet in elevation, and are disjoined from each other and the main by channels, of about one quarter of a mile in width. A few brass guns, apparently nine- or twelve-pounders, are mounted on open terraces, commanding the anchorage, but in the event of hostilities would prove rather exciting to our mischief-loving tars, who would desire no better amusement than tumbling them into the sea, or turning them upon the inland batteries. As it would be impolitic to play a bold game without closely computing the force of the opponent, so did we distinctly scan every line of the country we were approaching, and when the order for letting go the anchor was given, it was with the full conviction that the 'Samarang' was in a condition to resent any insult which might, *by mistake*, be offered to the Flag. By the kindness of my friend Dr. Bridgman, of the American Mission at Canton, I had been supplied with the voyages of the 'Himaleh' and 'Morrison', and their contents had been closely scanned, and duly weighed, long before sighting the shores of Japan; and having been further warned by Mr. Gutzlaff, the interpreter at the visit of the 'Morrison,' that I must expect treachery and be prepared to punish it, my readers will understand the semi-hostile, or cautious, feelings in which I have indulged. With no ostensible ground for my visit, beyond the pursuit of Science (more particularly that relating to Magnetic Observations), whilst anticipating the chances of repulse, with the paramount necessity for maintaining the credit of our Flag, my feelings were of a somewhat complicated nature. Should hostilities unfortunately take place, I was answerable to the Government, as my visit might possibly be interpreted as seeking them; and if surprised in this dilemma, one line of duty required, that I should, as the Captain of a British Ship of War, support the character of the Flag; whilst another, and very opposite line of policy, was embodied in my specific instructions; which enjoined that I should on all occasions of scientific duty, abstain from force. Insult to the Flag was, therefore, the only plea which warranted active service; however, I felt confident that by firmly maintaining my measures, I should prevent any exhibition of this nature. Had we been called into action, I foresaw without apprehension that the 'Samarang' in conjunction with her boat force, was in a condition to capture the two Cavallos Islands, and from the northern, supported by the ship, obtain possession of two batteries on the right, which commanded the lower forts opposite, as well as the harbour. We counted about twenty-four guns on the summit of the northern Cavallos, which could be brought to bear on the right-hand battery, and as they occupied about the same level as the batteries alluded to, it would have been an easy matter, by charging them with English powder, and serving them with British seamen, to have become masters of their defences. One such lesson, rapidly taught, the guns spiked, or withdrawn for embarkation, "with a disposition to renew friendly intercourse", would have put an end to any further symptoms of hostility. All this it may be said, reads very smoothly on paper, but we considered their batteries themselves little better than the substance on which these observations are recorded. The guns I had every reason to believe to be of sound workmanship and of bronze, excellent weapons worked by competent men, but with their miserable handling and from our knowledge of their execrably bad powder, incapable of throwing an effective shot at half range, and that a plunging one; we were therefore fully justified in under-rating them. I can only compare these weapons of defence, to a few field pieces pointed through a drying yard, and worked by old women. It will hardly be credited in the year 1845 that any place of defence could have been so constituted; the only cover, or breastwork, to this ordnance was composed of *sheets of calico* three widths in depth, and forty yards in length, each stretched on pikes, erected vertically, at fifteen or twenty feet asunder, and having, at the customary distances for embrasures, certain devices in black, to denote the regiment to which they belonged; and which certainly presented a most picturesque as well as warlike appearance in the distance, such as that of white-washed batteries, with gay banners at the extremities. As many regiments were collected on our arrival, these, joining their lines, gave a most formidable aspect to the harbour approaches; but with the assistance of good telescopes their absurdity was at once manifest, many being very deficient in *men*, and entirely wanting in *ordnance*.

Thus far for the pageant before us, which lasted in effect for a day, or until they had asertained how our pulses beat; that determined, they were soon left to flutter alone in the breeze, most of their Officers thinking it better to have a closer inspection of the ship from their boats. On approaching, some were observed to be handsomely accoutred, two in particular arrested my attention; they were dressed in japanned helmets decorated with gilded figures, a jacket of blue silk embroidery, and vest in imitation of silver scales, with loose white trowsers, and two swords. I requested the secretary to invite them on board, and motioned them to come. In reply to this they bowed most courteously and waved the finger, implying that they were forbidden. The interpreter informed me, that they belonged to one of the northern regiments, and as their language differed from that spoken at Nangasaki, they would not be able to converse with him. They were about twenty-five years of age, elegantly formed, about five feet eight inches in height and fair as any European, with small dark moustache, totally unlike any of the Japanese with whom we had hitherto communicated. The interpreter admitted that they were people of rank. As a proof that no thoughts of hostility were entertained, by them, we noticed shortly after our arrival that having laid all their guns for the 'Samarang' they quitted them; and nothing which could be construed into anything approximating to slight, such as pointing guns, or other hostile preparations, was noticed. Every thing was conducted in the most polished manner and with the utmost kindness. Being perfectly aware of their laws upon the subject, I had no idea when at Nangasaki of requesting permission to land, because I did not think it wise to risk a refusal. Indeed I gave them to understand most clearly, that I would not land unless requested to do so, and without the restriction demanded of the Dutch; impressing upon them "that our swords were part of our uniform, and without them we could not feel our capacity as British Officers." All this they comprehended, and bowed with great humility in acquiescence. Respecting their military preparation I was told in confidence by the secretary, that as the Chief who commanded at the period of the Phaeton's visit, was speared for his neglect, it was incumbent to take every precaution, for their own safety as well as credit; and for that reason (and, probably, under some fear arising out of our transactions in China), all the troops in the neighbourhood were summoned, though many had gone home since our arrival.

The following remarks from Titsingh will probably prove interesting in this place.

"On the first arrival of the Dutch in 1609, the Japanese were allowed to visit foreign countries. Their ships, though built on the plan of the Chinese junks, boldly defied the fury of tempests. Their merchants were scattered over the principal countries of India; they were not deficient either in expert mariners or adventurous traders. In a country where the lower classes cannot gain a subsistence but by assiduous labour, thousands of Japanese were disposed to seek their fortune abroad, not so much by the prospect of gain, as by the certainty of being enabled to gratify their curiosity with the sight of numberless objects that were wholly unknown to them.

"This state of things formed bold and experienced sailors, and at the same time soldiers, not surpassed in bravery by those of the most warlike nations of India.

"The Japanese, accustomed from their infancy to hear the accounts of the heroic achievements of their ancestors, to receive at that early age their first instruction in those books which record their exploits, and to imbibe, as it were, with their mother's milk the intoxicating love of glory, made the art of war their favourite study. Such an education has, in all ages, trained up heroes; it excited in the Japanese that pride which is noticed by all the writers who have treated of them, as the distinguishing characteristic of the whole nation.

"Having a keen sense of the slightest insult, which cannot be washed away but with blood, they are the more disposed to treat one another in their mutual intercourse with the highest respect. Among them suicide, when they have incurred disgrace or humiliation, is a general practice, which spares them the ignominy of being punished by others, and confers on a son a right to succeed to his father's post. As with us, the graceful performance of certain bodily exercises, is considered an accomplishment essential to a liberal education, so among them, it is indispensably necessary for all those who, by their birth or rank, aspire to dignities, to understand the art of ripping themselves up like gentlemen. To attain a due proficiency in this operation, which requires a practice of many years, is a principal point in the education of youth. In a country where sometimes a whole family is involved in the misconduct of one of its members, and where the life of every individual frequently depends on the error of a moment, it is absolutely requisite to have the apparatus for suicide constantly at hand, for the purpose of escaping disgrace which they dread much more than death itself. The details of the permanent troubles recorded in their annals, and the accounts of the first conquests of the Dutch in India, furnish the most complete proofs of the courage of the Japanese. The law, which has since forbidden all emigration, and closes their country against strangers, may have taken away the food which nourished their intrepidity, but has not extinguished it: any critical event would be sufficient to kindle their martial sentiments, which danger would but serve to inflame, and the citizen would soon be transformed into a hero.

"The extirpation of the Catholic religion, and the expulsion of the Spaniards and Portuguese, caused dreadful commotions in Japan for a number of years. The sanguinary war which we (the Dutch) carried on with those two nations, who were too zealous for the propagation of Christianity, and the difference of our religion, procured us the liberty of trading there, to the exclusion of all the other nations of Europe. The Japanese, perceiving that incessant seditions were to be apprehended from the secret intrigues of the Roman Catholics, and the numerous converts made by them, found, at length, that in order to strike at the root of the evil, they ought to apply to the Dutch, whose flag was then the terror of the Indian seas.

"The bold arrest of Governor Nuyts, at Fayoan, in 1630, showed them that the point of honour might every moment involve them in quarrels for the purpose of revenging the insults which their subjects might suffer in foreign countries or at sea. The decree of the Djogoun, which confiscated the arms of the people of Sankan, wounded the vanity of the Japanese. Numbers of malefactors, to avoid the punishment due to their crimes, turned pirates, and chiefly infested the coasts of China, the Government of which made frequent complaints on the subject to that of Japan. The nine Japanese vessels, then trading with licenses from the Djogoun, were to be furnished with Dutch passports and flags, in case of their falling in either with Chinese corsairs, or with our ships cruizing against those of the Spaniards of Manila and the Portuguese at Macao. The residence of Japanese in foreign countries, rendered their Government apprehensive that it would never be able entirely to extirpate popery. These various considerations induced the Djogoun, in the twelfth year of the *nengo quanje* (1631), to decree the penalty of death against every Japanese who should quit the country; at the same time the most efficacious measures were taken in regard to the construction of vessels. The dimensions were so regulated, that it became impossible to quit the coast without inevitable danger.

"Cut off from all other nations, encompassed by a sea liable to hurricanes, not less tremendous for their suddenness than their violence, and thereby secured from the continuance of hostile fleets in these parts, the Japanese gradually turned their whole attention to their domestic affairs. Their respect for the Dutch by degrees diminished. A mortal blow was given to our importance in this country by the removal of our establishment from Firando to Nangasaki in 1640, the chief objects of which were, 1. To afford some relief to the inhabitants of that imperial city, who, since the expulsion of the Spaniards and Portuguese, were daily becoming more and more impoverished; 2. To keep us more dependent, by placing us under the superintendence of their Governors. For the sake of our commerce, we patiently submitted to the destruction of our recently erected store-houses, the heavy expense incurred by the removal, and our imprisonment in the Island of Desima, where the Portuguese had their buildings, and which we had heretofore in derision denominated their dungeon. The humiliating treatment to which they then first subjected us, according to our records of those times, caused the Japanese to remark that they might act towards us in a still more arbitrary manner."

At that period, 1609, the Japanese may have fully merited the opinion expressed by M. Titsingh of their military importance, but this is now sadly changed; they are even behind the Chinese in this respect. Nor can I agree with the writer in his opinions as to the contempt of death, in the cases of suicide, giving any claim to bravery. It is almost a question to be classed with the soliloquy of the culprit under sentence of execution, whether he will submit to be exposed on the scaffold in obedience to the laws of his country, or whether to avoid this shame, which, in the cases of beheading, some have gloried in, he will venture the ordeal of appearing before his Judge on his own responsibility. It is needless to occupy time in discussing such a question of *bravery*, for those who witnessed the acts of every grade in the affairs of Canton River, must have remarked the hundreds which voluntarily drowned themselves rather than submit to capture, and yet, where was their valour? Did they oppose half-a-dozen red or blue jackets when they might have almost pitched them over the ramparts for their temerity? Courage is a different quality; it is not impetuous, it is not fool-hardy; it is cool, calculating, and not to be diverted from its object, either by difficulty, or success. If any lack of stability, command ceases, and the most disgraceful acts, committed by subordinates after the loss of command, or power to restrain, tarnishes victory. Under these circumstances I consider all points connected with true courage, bravery, or competency to command, to be a species of acting; acting upon sound and tenable grounds, and not for the credit of an idle triumph, reaping laurels for self at the cost of some of your best men. The loss, or even injury, of *one* is too dear, unless the calculation warrants the inference, that the loss of self and party is important to the cause, and may save the lives of many. The *acting* in these cases becomes the *natural act* of a man's life, and predominates whether the enemy be human, the gale, the surf, or the fatal closing of his career. On this last is the seal impressed, and in cowardly seeking it by suicide, is cowardice established.

" The houses of persons of quality are divided into two series of apartments. On one side is that of the women, who, in general, never show themselves; and on the other, is what we should call the drawing-room, where visitors are received. Among the trades-people and inferior classes, the women enjoy more liberty, and are less careful to conceal themselves from view: but, upon the whole, the sex is treated with great respect, and distinguished by extraordinary reserve. The finest pieces of porcelain, and those cabinets and boxes which are so highly esteemed and carried all over the world, instead of serving to decorate the apartments in ordinary use, are kept in those secure places above-mentioned, into which none but particular friends are admitted. The rest of the house is adorned with common porcelain, pots full of tea, paintings, manuscripts, and curious books, arms, and armorial bearings. The floor is covered with thick double rugs, bordered with fringe, embroidery, and such like ornaments. According to the law * or the custom of the country, they must all be six feet in length, and three in breadth.

"The two suites of apartments, into which the body of the house is divided, consist of several rooms, separated by mere partitions, or rather by a kind of screens, which may be moved forward or backward at pleasure; so that an apartment may be made larger or smaller as there

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* This law appears to prevail at the Meia-co-shimas, which leads to the inference that they are subject to Japan.

may be occasion. The doors of the rooms and the partitions are covered with paper, even in the most splendid houses: but this paper is adorned with gold or silver flowers, and sometimes with paintings, with which the ceiling is always embellished. In short, there is not a corner of the house but has a cheerful and pleasing appearance. This mode of arrangement renders houses more healthy: in the first place, because they are entirely built of fir and cedar; in the second, because the windows are so contrived, that by changing the place of the partitions, the air is allowed a free passage through them. The roof, which is covered with boards or shingles, is supported by thick rafters; and, when a house has two floors, the upper is usually built more solidly than the lower. It has been found by experience, that a house so constructed, resists the shocks of earthquakes better. In the architecture of the exterior there is nothing very elegant. The walls, which, as I observed, are of boards, and which are very thin, are covered in many places with a greasy earth found near Osaka; or, instead of this earth, they give the outside a coat of varnish, which they lay on the roofs also. This varnish is relieved with gilding and paintings. The windows are filled with pots of flowers, which, according to Caron, they have for all seasons; but when they have no natural flowers they make shift with artificial ones. All this produces an effect that pleases the eye, if it does not gratify it so highly as beautiful architecture would do."

These remarks particularly apply to the houses of the Meia-co-shimas, Loo-Choo, and Quelpart. The mats in particular are, I perceive, according to law, which I suspected to be the fact at the Meia-co-shimas, their depth (of three inches) is omitted, without this dimension they would not preserve an evenness.

Having waited patiently until 7 o'clock, without any appearance of boats coming, we made sail, and continued working over the anchorage for the filling in of our survey.

I now come to the most puzzling consideration of this visit. For my own part, I should, without hesitation, from the confidential communications held with those in power, have maintained that nothing could be discerned which warranted the slightest apprehension of false dealing; yet, in justice to the feelings of my Officers, who had their eyes keenly open to any symptoms of bad faith, I must say, that several differed materially with me as to the medium through which I received our communications with these people; and yet, no single act could be adduced sufficient to warrant my attaching any sort of duplicity to it. It is true the failure of the Chief to keep his appointment (2 A.M., until 6), during which interval it blew and rained, very much to the detriment of their paper-wrought defences if they ventured, was deemed suspicious; but considering it as I have done, a final fiscal visit, I cannot enter into this feeling. However, after making sail, this afforded a plea for working to and fro over the anchorage, surveying the ground, ostensibly waiting the final visit of this Officer. During this detention, we observed the Guard boats, with guns and scaling ladders, pass our bows and go to the southern Cavallo; upon noticing this, some remarks were ventured that it *might possibly have been their intention* to take the

'Samarang' by storm the preceding night! What business had they with recently constructed scaling ladders? guns concealed by mats, &c.? All this is absurd. It would be high time to ask their reasons when we were satisfied of the *intention*, but it would really be placing the Japanese too low in the scale of civilized nations to imagine that they would risk, not only the inevitable defeat, which they must have been fully aware would have been the result of any attempt to court hostilities with Great Britain by such an unprincipled unwarrantable insult; at a moment, too, when, from their own admissions, they anticipated, with *satisfaction*, an official visit from our country, attended with overtures for the renewal of friendly intercourse.

On the other hand, let us look at this nation with the same clear-sighted vision that we would judge one of either a timid, or intriguing, disposition. In either case we must, to a certain degree, admit weakness, or cowardice, and this being the case, would they, entertaining such machinations, have so fearlessly trusted themselves in our power until so late an hour at night, as in the case of the Mandarin and the Secretary, or Interpreter? Or, giving us credit for a degree of weakness, or stupidity, (which was not very apparent) would they have acted with such *madness* as to have risked their frail Gun boats immediately under the bows of the 'Samarang' under canvas, with a commanding breeze, and liable to speedy annihilation. No! treachery results only from cowardice, and we saw nothing of this complexion; moreover, there were not more than ten men in each boat, merely sufficient to take charge of the ordnance, munitions, &c, when landed, and probably returning by sea to the station from whence our appearance had caused their summons.

As the non-appearance of the Officer warranted our delay at the anchorage, in the hope of his visit, the ship continued plying over the ground (perfecting our work), when, despairing of the contemplated visit, we bore up at noon on the 10th of August, and took our farewell for the season, as we imagined, of the shores of Japan. My most ardent wish is, that the next visit of a British ship-of-war may be attended with equal courtesy, and that she may obtain all the objects so fully anticipated upon the revisit of the 'Samarang.'

The following remarks are from the voyage of the 'Morrison' before alluded to, in 1837, which contains, under the term introduction, extending to seventy-five pages, a suitable digest of the early history of Japan.

"The earliest visitor to these regions is supposed to be Marco Polo, succeeded by Fernando Mendez Pinto, driven upon their shores by a gale in 1542. Xavier followed in 1547, and was very successful in propagating the Catholic religion, but quitted in 1551.

"About this time (year 1569) the Portuguese first pointed out to the Prince of Omura the advantages of the harbours of Nangasaki over the ports they had been used to frequent. Their suggestions led to the formation of a settlement, which, ere long, became an important city, and which retains an unhappy celebrity down to our own day. It may give some idea of the rapid extension of Catholicism at this time, to add, that the successor of Xavier died in 1570, having founded fifty churches, and baptized more than 30,000 converts with his own hands. Yet mingled with these successes, we have accounts of the apostacy of one of the Princes, and the persecutions inflicted by order of another"

"In 1570, the Kubo (or Djogoun) Nobunanga succeeded to the throne and favoured the Christians, and in 1583, the then Princes of Omura, Bungo, and Arima, visited Lisbon, and paid their respects to the Pope, returning to their own country in 1586.

"Nobunanga was succeeded in 1582 by Fide Yosi, (the famous Taico,) who still continued his patronage of the Jesuits, many of his best Officers being their friends. It is asserted that the only bar to Taico's embracing Christianity was his refusal to give up his Harem. In 1587 the Japanese began to suspect their friends, and from various causes assigned, Taico, on the 25th of June, issued an edict banishing the Christian Missionaries. They were required to retire to Firando within twenty days, and to depart for India within six months, on pain of death. The crosses they had erected were ordered to be thrown down, and the churches razed."

About this period Taico declared war on China and Korea, under the intention, as ascribed by the missionaries, "of getting rid of the Christians among his Officers and troops, by sacrificing them in a foreign war. That he cherished such a design is inferred from his after life, and that he was unwilling to accomplish it by domestic persecution is shown by the fact that of 200 priests, and 1,000,000 converts, then in his dominions, he put but twenty-six or twenty-seven to death. The war with Korea and China terminated in favour of the Japanese in 1593."

"In 1596, the 'Galleon', from Manila, bound to New Spain, was driven near the Japanese coast, and enticed by the Prince of Tosa into one of his ports. Here she was embargoed, and her Commander negociated in vain for her release. In the course of this negociation, one of her company sought to produce an impression, by pointing out to the Japanese Officers on a map, the extent of the dominions of the King of Spain. The Japanese asked with surprise, 'How is it that your King has managed to possess himself of half the world?' The Spaniard replied, 'He commences by sending priests, who win over the people; and when this is done, his troops are despatched to join the native Christians, and the conquest is easy and complete.' 'What! my empire filled with traitors! these priests that I have nourished are serpents!' and he swore that not one of them should be left alive. New edicts of banishment followed; and the 5th of February, 1597, was marked by the martyrdom of twenty-six priests."

The intrigues, discussions, and recriminations, which then prevailed between the different sects, Dominicans, Franciscans, Augustines, and Jesuits, each in their turn charging the other with conspiracy, opened the eyes of the Japanese, and rendered their removal politic. However, upon the death of Taico, in September, 1598, he was succeeded by Yeye Yason, or Gongin, who again countenanced the Catholics.

The first mention we have of the Dutch occurs in the following:—

"In 1608, a sad casualty, fraught with the worst consequences, occurred at Macao. The crew of a Japanese junk, in a riotous state, provoked a contest with the military, and twenty-eight of them were killed. The Governor, Pessoa, by whose order they were fired on, conducted the annual ship to Japan the following year. The report of his conduct was not slow in following him, carried probably by the Dutch, who arrived there in the first ship sent by their East India Company the same year. The recent liberation of the Dutch from the tyranny of Phillip II., and their vivid recollection of the enormities of Alva and his coadjutors, must be allowed, perhaps, to palliate their voluntary information, and their proposal to seize the ship of Pessoa, present her to the Kubo, and in future to supply the country with the articles which the Portuguese had previously furnished.

"While the Kubo hesitated, a Spanish vessel was wrecked on the coast, having on board the Governor of the Philippine Islands on his way to New Spain. The shipwrecked governor was introduced to the Kubo, who asked him if the Spaniards could supply Japan with silks, &c., provided the Portuguese were driven away. The reply was, that Manila could supply three times as much as Macao. Thus doubly assured, the order was given to seize the ship, behead Pessoa, expel the Jesuits, and give their establishments to the Spanish priests.

"On the 9th of January, 1610, the attack was renewed, Pessoa and his crew overpowered, and the ship burned. After which, the Emperor relenting, permitted the Portuguese to continue their trade."

In 1613, an English factory was established at Firando, the Dutch and English making common cause against the Spaniards and Portuguese.

"In 1614, an edict issued for the demolition of the churches and banishment of the priests. They were impolitic enough to interfere in matters of state, and the party to which they were allied proving the weaker, they were proscribed afresh, and whoever harboured them were to be condemned to death. This Kubo died in 1616, but Fide Fada, his successor, followed out his intentions.

"In 1620, the persecution slackened, but was rekindled in 1622, when the distinguished Spinola, and many others were burned.

"In 1624, the persecutions were rigorously pursued, extending even to the violation of the Christian graves. Before the year was passed, the Spaniards were banished for ever, and the ports of Japan closed, except Nangasaki for the Portuguese, and Firando for the Dutch.

"Persecution seems to have raged, with little intermission from 1627 up to the death of Fide Fada in 1631. The boiling crater of Mount Ungem (Unga) was now a common instrument of death. These cruelties appear at last, to have made an impression even on the Dutch.

"The character of the cruel, vicious Yeye Mitsou, was already well known. By his orders, Desima (a little islet off Nangasaki) was constructed, and to this new prison the Portuguese were consigned in 1635, amid the derision of the short-sighted Dutch. The armaments of their ships were now taken away, no one was suffered to speak to a native on religion, nor to walk without a guard. Their native wives, and the children by these connexions, were ordered to be shipped off to Macao. The following year was marked by the introduction of the ceremony of trampling on the cross.

"The death-blow of Catholicism in Japan was now about to be struck, and we are told that the fury that dealt it, was roused by the discovery of a conspiracy against the throne, formed by the native Christians and Portuguese. Papers, found on board a Portuguese vessel captured off the Cape of Good Hope by the Dutch, are said to have brought this treason to light. It is not, however, necessary to believe this. It is easier to fabricate a letter, or a tale of a letter, than to conspire. Forgery is less hazardous than treason. Besides, the story has been denied most solemnly by the Jesuits, and their word cannot be worse than that of the Dutch, on whom its credibility rests. Moreover, another and a better cause is at hand. The patience which had borne with heroic, if not christian constancy, so many trials, was exhausted; and the native Catholics of Arima and Simábara flew to arms. Thirty-eight thousand of them fortified themselves in the latter place. The besieging army, eighty thousand strong, could not reduce the fortress; and the Dutch director Kockebecker, was summoned to its aid. He came. The walls of Simábara were battered by the Dutch cannon, and its brave defenders perished to a man, fighting to the last. Some apology might again be made for this co-operation at the siege of Simábara, had its defenders been the countrymen of Alva, or Requesens, or John of Austria, or Alexander Farnese. But truth requires that the measures of Kockebecker should be regarded as the alternative, which he deliberately preferred to an interruption of the Dutch trade. Our sense of his guilty choice cannot be expressed in stronger language, than by declaring it unparalleled in the history of

Dutch intercourse with the East. Henceforth the residence of that nation in Japan can be regarded only as an Aceldama;—its purchase, a river of innocent blood.

"Four of the most distinguished citizens were deputed to soften the rigorous proceedings of the Government of Japan. They arrived at Nangasaki in July, 1640, and were immediately put under arrest. The edict condemning all Portuguese who should enter Japan was read to to them; and on their confession that they were aware of its existence, were sentenced to death. The following impious inscription was placed on their common grave: —'So long as the sun shall warm the earth, let no Christians be so bold as to come to Japan; and let all know, that the King of Spain himself, or the Christian's God, or the Great Saca, if he violate this command, shall pay for it with his head.' The ship which carried the Ambassadors was burned, and the crew returned by another conveyance to Macao. The people of that city abandoned with horror all further attempts on hearing their terrible tale."

Thus terminated Catholicism and Christianity in Japan.

"On the arrival of the Dutch ship or ships of 1611, a formal edict in favour of their trade was obtained. It gave them the full enjoyment of the privileges possessed by their competitors. No duties appear to have been levied on them, nor any regulations as to the quantity or assortment of goods, or as to time and place of sale, imposed. They were not exempt from municipal laws, but in all other respects they were 'let alone.' We have no account of the nature and extent of their annual trade at this period, but it doubtless flourished through the remainder of the reign of Gongin,[*] and that of his successor, up to his division of the royal authority with his son in 1623. Persecutions had been the lot of the Romish clergy through the greater part of this interval, but it does not appear that any substantial preference was yet given commercially to the Dutch, over the Portuguese flag. Both parties came under restriction in 1623.[†]

"About this time the Dutch renewed their prayer that the Spaniards and Portuguese might be driven from the country, promising to supply Japan with goods, and, moreover, offering to transport Japanese troops to capture Macao. Here is the 'Nuit's' spirit again, seeking satisfaction for the failure of the attempt on Macao, in 1623.

"The Portuguese were now shut up in Desima, and we may form some idea of the extent and minuteness of the official measures resorted to, to abolish every memento of their religion, from the fact that the Dutch were required to erase the date of their erection from their factory gates. Their full compliances, and especially their distinguished services at the siege of Simábara, in 1638, deserved a better recompense; if there be, as it is said there is, a kind of honour, a social compact, kept

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"[*] It seems to tell against the tendency of Catholicism in Japan, that Taico and Gongin, two great princes, should stoop to persecution to guard against a disputed succession, or to ensure the quiet reign of a son, without taking pleasure in such cruelties during their lives. We are prepared to make allowance for selfishness or passion, but we cannot refuse a certain respect to actions done to prevent evil consequences to others,—to a father's provision for his son, when he himself shall be no more."

"[†] The Portuguese had no ships in Japan in 1623, they being kept back by an attack of the Dutch (and English?) in Macao."

between the worst of men. From this saying, the Japanese of 1640 must certainly be excepted, for at that time, only two years after the butchery of Simábara, they consigned their gallant allies to the prison of Desima, just emptied by the expulsion of the Portuguese. A little before, the Dutch had been told, 'You observe Sunday, you date from the birth of Christ, your prayer is to him, and your confession of faith, that of His disciples; the gospels, the prophets and the apostles are your sacred writings; and there is but little difference between your belief and that of the Portuguese. We have known this for a long time, but we saw that you were enemies of the Spaniards and Portuguese. We now require you to erase the dates from your buildings, to cease to observe the Sabbath; and as for your future conduct, the lords of Firando will tell you the rest.' Against these instructions, and the transportation to Nangasaki which followed, not a murmur was raised. The Dutch were now left in sole possession of the trade with Japan, and since that time it is well known their monopoly has never been disturbed. Their subsequent political intercourse has been limited to an occasional mission from Batavia, and the visits of the Dutch chief of the factory to Yeddo, formally made annually, but now once in four years.

"Holland falling again under French occupation, the Javan Islands were taken possession of by Great Britain, in 1811; and the Dutch residents at Nangasaki had been more than three years without communication with Europe, when the expedition planned by Sir T. S. Raffles arrived there, in 1813. A notice of this bold experiment, and of a second trial made the year after, will be found in our sketch of British intercourse. Both failed to remove the president of the Dutch factory at Nangasaki, who kept his place until the trade with Japan was renewed, on the restoration of the Dutch E. I. colonies, at the peace of 1815. The pertinacious M. Doeff was relieved by the arrival of a legitimate successor in 1817. Since that time, the trade has been carried on for account of the Dutch Government, with the exception of the years 1828 and 1829. The two annual vessels are chartered, and the principal articles of their cargoes laden by government, which receives and employs, chiefly in the Batavian coinage, the copper that constitutes the great return from Japan. The minor articles sent in these ships are put on board by private merchants, who purchase, at auction, their licenses to take this part in the trade. We have no list of cargoes later than that of 1806, given in the appendix to the 'History of Java,' and which consists of sugar, tin, woollen cloths, chintzes, pepper, spices, sapan wood, &c., &c., valued at 175,000 dollars; the returns for which were in copper and camphor, and the balance in favour of the voyage, 175,000 dollars. But in this account, the copper is assumed by the mint at fifty dollars per picul, considerably more than the market price."

Speaking of Adams, an English pilot, in the interest of the Dutch:—

"Three years after this, one of his letters, addressed to his countrymen in Java, fell into the hands of Capt. Saris, one of the Commanders of the English E. I. Company, who, acting on its invitations, sailed for Firando early in 1613. Capt. Saris had letters of commendation from James I., with which he repaired to the court of Gongin at Surünga, where he was well received. He subsequently paid his respects to the heir apparent at Yeddo, and returned to Firando with full permission for himself and countrymen to carry on a free trade. Saris then returned to England, leaving Mr. Richard Cocks at Firando as factor of the English E. I. Company, where he remained until the establishment was given up, in 1623.

"The civil wars of England had long been succeeded by the restoration, when the ship 'Return' was sent to Japan in 1673. On his arrival at Nangaski, the captain was asked what religion he was of; and how long his master had been married to a Portuguese princess; and if they had any issue? Information as to the fact of this state connection, the Japanese must, of course, have derived from the Dutch. Inquiry was also made, why forty-nine years had been permitted to elapse, and no attempt been made by the English to renew the trade? The answer was, that the greater part of the interval had been passed in civil convulsions and foreign wars. Several conferences ensued, which turned chiefly on the Portuguese, and the difference between the English and the Portuguese. A month after the arrival of the 'Return', it was announced, on the part of the Kubo, that 'his subjects could not be permitted to trade with those of a king who had married the daughter of his greatest enemy; and that the English must sail with the first fair wind.'

"Another century had nearly elapsed, when the last expedition of Cook passed down the eastern coast of

Niphon, after the great navigator's death, and decorated several of its capes with English names, which still keep their places on the charts.

"Twelve years later, in 1791, Capt. Colnet skirted the western shores of the Japanese Archipelago, in search of some point where trade might be opened; but was everywhere repulsed by the boats of the coast-guard. Wood, water, &c., were, however, furnished him, without pay.

"In 1796, Capt. Broughton visited the Japanese islands, for the purpose of discovery, and passed some time in surveying and refitting on the coasts of Yesso or Matsmai. He was kindly treated, supplied with refreshments, and even boarded by the fishing boats as far south as the bay of Yeddo. Being in a public exploring vessel, he, of course, made no attempt to open a trade.

"In 1803, the ship 'Frederick' was sent to Nangasaki from Calcutta, with a valuable cargo of British goods. Capt. Torey, who commanded her, was refused admittance to the harbour, and required to leave the road in twenty-four hours. The Calcutta merchants were probably led into this attempt by the representations of M. Titsingh, who, as Dutch resident at Chinsurah, had been their neighbour for many years. This gentleman seems always to have looked back to Japan, and to his stay there with the fondness so often felt toward an old residence, the discomforts of which are forgotten, but the agreeable recollections still retained.

"In 1808, two years after Louis Buonaparte had been crowned king of Holland, the English frigate 'Phaeton' entered the harbour of Nangasaki in search of Dutch ships, with orders to 'sink, burn, and destroy.' On her being boarded by the Japanese officers, accompanied by two of the Dutch factory, an accidental rencontre took place, and the gentlemen from Desima were detained for a short time as prisoners of war. Notwithstanding this, the governor of Nangasaki obeyed the requisitions, and furnished the ship with all needed supplies. Opposite accounts are given of the effect of these proceedings of Captain Pellew; one, that everything was yielded at his requisitions, the other, that preparations were in progress, which would have cut off the frigate, had she not hastily put to sea. According to the Dutch version, this unfortunate expedition had no results, but to prejudice the British name, and to compel the governor of Nangasaki to the last resort of an implicated or unfortunate Japanese officer, viz., to commit suicide. The English statement, on the other hand, relieves Capt. Pellew of all blame, and throws on the malicious disclosures of the Dutch, who had been requested to report the 'Phaeton' as an Indiaman, the whole responsibility for the consequences, whatever they may have been, of their disclosure that the strange vessel was a ship of war.* In 1811, a British armament, from Bengal, took possession of the Java Islands, and in 1813 two ships were despatched by the Lieut. Governor, Sir T. S. Raffles, to renew the communcations with Japan. The cargoes of these ships consisted of sugar, tin, spices, woollens, chintzes, &c., amounting to 298,000 dollars. The returns, including debts paid in Japan, and goods left unsold there, amounted to 342,000 dollars—balance in favour of the voyage, 44,000 dollars. It is added that the result would have been better, but for the high cost and poor assortment of the cargoes, and the extravagant rate of freight. Dr. Ainlie, who accompanied this expedition, returned with the impression that 'the Japanese were entirely free from any prejudices that would stand in the way of an unrestricted intercourse with Europeans. Even their religious prejudices appeared, to him, moderate and inoffensive. Commerce with Japan, both in exports and imports, was in his opinion, extensible to a long list of articles not yet exchanged, and capable of great increase. We will not attempt to decide how far his opinions on the accessibleness of this empire may have been modified by the views and wishes of his patron and friend. The following year a second effort was made by Governor Raffles, in a single vessel, to place British representation at Nangasaki; but the pertinacity of the Dutch president triumphed in this, as in the former instance, and he kept his footing as the impersonation of the old regime, until Java and its dependencies fell again into Dutch hands, after the peace of 1815."

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* Vide Quart. Rev. no. 112, and U. Service Journ. for Mar. 1836.

The position of the western islet off the anchorage at Nangasaki, upon which our Observations were made, was determined to be in Latitude 32° 43′ 32″ N., Longitude 129° 43′ 54″ E., Variation 2° 35′ 39″ W., and Dip 45° 6′ 2″. The coasts of Japan have not at any period been surveyed by competent persons, and the outlines of the main islands, which we possess, and upon the authority, I believe, of the Jesuits, can only be reckoned as Maps, instead of Charts; consequently, the out-lying dangers, consisting of rocks and islets, not coming within their knowledge or power of placing, were found to be more numerous than we had anticipated, and afforded us much uneasiness during the thick rainy night which ensued. Dawn only assured us that had we been visited by northerly gale, we might have stood a very fair chance of wreck upon the dangers which studded our path, and have sought a renewal of friendship at Nangasaki earlier than we had anticipated.

"The sweet little cherub that sits up aloft"

had, however, kept a bright eye on the 'Samarang', and she was now quietly threading her way to a safe offing.

It now became our object to make the shortest run for Loo-Choo, both on account of Chronometers, as well as provisions, but calms and variables, added to the discovery of islands not on our charts, rendered our unwilling detention interesting. On the 13th of August we landed upon one of these *terræ incognitæ,* and effected a tolerable survey, by despatching the master and second master to two others. On the 14th a similar course was pursued, but, unfortunately, at the moment of embarkation an accident happened which caused me considerable uneasiness; the coxswain, anxious for my comfort and safety, had so placed himself between the rocks and the gig, that the receding swell jammed him between her stern and the rocks, and the wave falling lower than usual, caused our boat to upset and fill. Every instrument but the Chronometer, then in my hands, was lost, including all the *pets,* public as well as private; thus, at one blow, almost paralysing future exertions; certainly destroying that degree of confidence in the observations which these instruments warranted. After this, as if sympathising in our disaster, a favourable breeze ensued, and before sunset the 'Samarang' was moving about seven knots towards her destination. This continued until sighting the Loo-Choo group, when it again fell calm, preventing our reaching anchorage until the 18th, about 4, P.M. Here we found the 'Royalist,' which had been appointed as our consort, awaiting our arrival; but to our great disappointment, with barely provision to enable us to reach Hong-Kong, thus destroying all expectations of examining this interesting group, with the same satisfaction and freedom as we had done at the Meia-co-shimas, as well as cutting off that measure of relaxation to which our crew looked forward after cheerful submission to extraordinary and arduous labour, consequent upon this peculiar service. So satisfied were the Board of Admiralty upon the necessity of these relaxations, upon reaching port, that to prevent any misconception upon this important point, it was embodied in a distinct and special letter; but as the 1st of September was specified as my final limit for return to Hong-Kong, anything short of absolute necessity forbad delay. Every exertion was, therefere, directed towards completing, and during the interval requisite for rating the Chronometers, I determined on making the most of my detention amongst these people.

The ceremonial forms were, on account of my recent visit much curtailed, and I found myself infinitely more at home with these people than I had anticipated. The Frenchman had been less vigourously treated, but they had by their tact prevented their people from communicating so freely with him as before, thus turning the tables in order to render his excursions so monotonous as to cease to be interesting. His funds, too, had fallen low, but the arrival of the 'Royalist' had enabled him to obtain supplies.

The presence of the Frenchman now proved of some importance to ourselves, as he, having visited the interior, was able to afford me much information, and assisted in forming plans for an excursion, which having already been permitted to him, they could not, by courtesy, deny to me. The intimation that I wished to take air on the mountains, and that the Frenchman should accompany me, was conceded without difficulty, and having arranged to breakfast with the Padre, our horses, guides, &c., were assembled at his gate. After breakfast, our party, consisting of the Padre, Lieut. Ogle, of the 'Royalist', Lieut. Roberton, of the 'Samarang', and myself, with one Mid. and our interpreter, Aseng, mounted our steeds, and accompanied by Mandarins, great and small, with attendants, forming a goodly throng, proceeded on our journey. The interpreter had some little communication with me previous, and having intimated a wish that the great town, or city of the Emperor should not be entered, I assured him most fully upon this matter, reminding him of our proceedings at the Meia-co-shimas; upon which he concluded, "you are at liberty to do as you please, Loo-Choo man very small." Our steeds were led with some little ceremony until we gained the outskirts of the town, when they were left to our own control, or, more truly, to their own instinct. I am not quite satisfied that mine, which was a very active, but easy-going little animal, had not inherited some of the feelings of his biped masters, for he never missed an opportunity whenever we came within reach of the Padre, either of lashing out at him with his heels, or, if in advance, of snorting, and using his fore legs: frequently to my discomforture; the Padre on occasion remarking, "you perceive that even their horses are taught to dislike me." Having ascended about one-third of the distance, to the highest ridge, commanding a view of the town and anchorage, as well as the city above us, we were invited to rest and take refreshment in a small thatched house, apparently constructed for the occasion. Our next stage carried us through a much more interesting country than my view from the sea led me to imagine existed in Loo-Choo. No hesitation was now shown by the inhabitants in taking us through their villages, the old women were driven away, or made to stoop in hiding their heads, but were, in all probability, taking a sly peep under their arms; and the young ladies in the houses were very plainly pulling the blinds aside to get a sight of the barbarians. At length we reached a very pleasant sequestered spot, surrounded by large trees, and barely admitting of prospect beyond the anchorage and town beneath. Here mats were spread upon the grass, and being seated, sweetmeats, cakes, tea, &c., were again introduced, and from the regular "set to" and the abundance of canteens produced, I suspect that this was the general meal hour, as in reply to my wish to proceed, it was hinted, "Mandarin man eat plenty this time." It appeared also to be in some measure devoted to the toilet, if one might judge from the various heads under the manipulation of the youthful valets.

At length, having re-mounted our steeds, we proceeded by gentle oblique roads, leading towards the highest range, pretty well paved, and shaded with trees of large size on either side. At the summit the ground appeared to be levelled by art, and the Padre taking the lead, passed into a narrow path, reaching to the summit, at the boundary wall of which a tablet with characters in Chinese, gave some description of the building above, which was now in a state of ruin. From our examination of the area which it had occupied, being about 300 feet in length, by eighty or ninety wide, and, probably, twenty-five feet in height, as well as from one or two vestiges of bastions, or turrets, which remained, it struck me as belonging to the same school of fortification as those at Quelpart, which differ from anything I have observed in recent works in China, Loo-Choo or Japan, inasmuch as the latter are rather deficient in placing their flanking guns to advantage. From the summit of these ruins, apparently the most commanding height upon Tah-Liew-Kiew (Great Loo-Choo), we were able to see the ocean on all sides, as well as every remarkable feature on the island, completely overlooking the city of Sheudi, or Shoolee, the town of Napa, anchorage, &c. As I had already received official notice "that if I would not re-visit the Meia-co-shimas, to survey, every facility would be afforded here, where there were plenty of Mandarins to attend upon me," I considered this to be my most important station, and viewed with considerable interest the features of the island thus delineated, as on a map, beneath me, mentally singling out snug little bays and interesting spots for our resting-places.

The view of the city of Sheudi from hence, apparently above a hundred feet or more, lower in level, as well as from several other positions, aided by a good reconnoitring telescope, led me to imagine that it has not been constructed for the purpose of defence. It appears to be a walled inclosure, occupying the crest of a hill, steep towards the north, or side next the anchorage, but jutting in a peninsular form from the level behind it. These walls, which follow the inequalities of the rocky face of the hill, are probably from forty to fifty feet in height, very slender, and not calculated to support ordnance; they are neatly kept and whitened, and have flag-staves on three of the angles, on one of which a banner was occasionally exhibited. On the land side, the walls are not in such good repair, and at the neighbourhood of the eastern gate, not more than ten or twelve feet in height; the road leading to this gate was by a paved causeway, and with so large a proportion of well-built houses on either side, as a suburb, that it impressed me with the idea that the comparatively small space inclosed by the walls might contain a palace, temple, or some public establishment. In confirmation of this idea, I was unable when at our best position (where we breakfasted), and nearly at its level, to detect more than two great buildings, occupying the eastern side; the remainder was concealed by the very thick foliage of the large trees within, which are not common in towns. Previous visitors have indulged in various conjectures about this city, the Emperor, and various other subjects, relating to the difficulty of penetrating into the interior. I do not mean for a moment to insinuate that those who preceded me were wanting either in tact, or determination, but either these people have changed, their superiors have relaxed, or, (the most important point,) they were not aided by so determined a Chinese interpreter as I had in Aseng, the pupil and servant of my lamented friend, Mr. Morrison, able to speak as well as write the court dialect. It will be seen that this latter advantage was important; first at the Meiaco-shimas; next at Quelpart, and the Korea; at Japan; and now, at Loo-Choo. Restraint appeared to dissolve before him. This may also be attributed to the presence of the Frenchman, but certainly did not extend to the permission to survey their islands. Here we were on the summit of one of the Loo-Choo peaks, as guests, fêted at every turn, and I feel that I may safely say, nominally, *by my own proposition*, excluded from entering this enchanted city.

Before I descend from this elevation, let me discuss the questions of "the Emperor". I found on many occasions that my interpeter confounded the terms Chief, Mandarin, Examiner, King, Queen, and Emperor, which also expressed Ruler, and it was not without special examination, on every occasion, that I induced him to adopt the proper English words. So it has probably happened with others at Loo-Choo, with respect to the designation of 'Emperor.' But on this occasion I was determined to probe the matter more closely. I therefore demanded of him where the *Chief* resided? The reply was, "Sheudi". "What is his rank?" "Mandarin, not first chop." "Has he a button?" "No—I think he Japan Chief."

"Enquire." "He no like say." "Ask why they sent reports from Pa-tchung-san, and hence to Japan, stating how I had been employed, if their Chief was not under Japanese rule?" "He say, 'who told you he send chop to Japan'?" The interpreter having explained, all the reply we could obtain was, "He say he must do so." However, this point was indirectly established at other meetings, and satisfied me that all the chain of islands continuous from Japan, as far as the Meia-co-shimas, are penal settlements under Mandarins, not Emperors. Referring to the visit of the 'Morrison' to this port, on her passage to Japan, having on board the Japanese who were wrecked near the mouth of the Columbia, in the Oregon territory, it appears, that the chiefs of this place expressed great anxiety about them, observing, "that it would be far better to send them from Loo-Choo by one of the Japanese junks." Would they presume to do so in defiance of the known laws of Japan, unless they possess some delegated authority? It appears further, that on discovering the determination to proceed in the 'Morrison', that the communication with that vessel became more restrained, probably, to prevent intercourse with these people; the language of these islands being very similar to that of the lower orders in Japan. However, a document put on board at the moment of departure, and translated by Mr. Gutzlaff, as well as by another, totally unconnected with him, at Hong-Kong, and agreeing, clearly points out the authority of Loo-Choo over the Meia-co-shimas, and Mr. Gutzlaff, from it, and other sources, perfectly coincided in opinion with me upon their being under the control of Japan.

Having descended from our elevation, we entered a Temple close at hand, where further supplies of tea, saké, refreshments, &c. had been prepared for us; after which, somewhat to my surprise, our conductors led us by a road directly for the city of Sheudi. At one moment I began to fancy that they intended to surprise me by some mark of peculiar favour, at another, that they wished to make the experiment in order to ascertain how far they could calculate upon our dispositions. The Padre, finding that we were very near the city, even in the suburbs, and unattended by our Mandarin escort, wished to push forward, but as my word had been pledged, either directly, or indirectly, to refrain from such a step, I merely advanced to the crossing, by way of ascertaining how far our guides had neglected their trust, and drew up, when we were soon rejoined by our attendants. As soon as they perceived, by my smile, that I did not intend committing them, they appeared voluntarily to relax, and I suspect that had I been alone, they would not have objected to my riding through the town. However, they took us by a nearer route, immediately round the base of the little hill on which it stands, and by this measure, we obtained a shorter and more convenient road towards the town of Napa, where we arrived without further incident, passing through the suburbs at Pootsoong, without the slightest surprise on the part of the residents, to whom, probably, the appearance of the French had become familiar.

During this excursion another subject was discussed which entirely destroyed former assertions as to the questions of barter or use of money. In the first instance, I have already alluded to the lowness of funds, on the part of the French rendering them uneasy. How could this happen if money was not in circulation? But the French were able to purchase their supplies in the market, either directly, or, I believe, latterly, through a Mandarin, appointed to superintend these affairs. But to put the question to the test, I made the inquiry as to the value of such a pony as that furnished me; the reply was, "fifteen dollars." "Can I purchase one for that sum?" "Undoubtedly." "Can I purchase this one?" "Yes." He was not a purchase, but ' 'a tribute horse" from Shantung Province, near Pekin, sent by the Chinese Emperor. My Interpreter in this case also mystified the term *present* into *tribute*, as it was undoubtedly a present. Finally, on dismounting, before the horse could be changed, I repeated the question:—"Will you sell this horse for fifteen dollars?" On the reply in the affirmative, Aseng marked him, and the next day he was sent off to the ship in one of their boats; but on producing the fifteen dollars, it was intimated that if I had an old telescope, the Mandarin would prefer it. Sufficient has, I trust, been adduced to show the habit of *dealing*, and upon the question of remuneration, they gladly accepted flannel, cloth, calico, silk, and crapes, with other trifles which were sent in return for presents made to the ship, and for which I obtained *receipts*.

On my return to the ship, an invitation was brought on board "from the Chief Magistrate of Napa, specially deputed to communicate with, and receive the foreign Chiefs," requesting the company of myself and Officers on the day following, at an entertainment. The number of Officers, names, and rank, to be specified. The weather proved rather unpropitious, but I think that our party numbered about twelve. The place appointed was not as I suspected, at Pootsoong, but at a position infinitely more convenient. This was at a building situated at the inner angle of the stone causeway, projecting mid-channel from Napa, at the point where the junks are moored, and probably used as the Custom House. Here we found a very convenient inclined jetty, enabling us to land without difficulty, and within fifty yards of the gate of entrance to a square court inclosed by substantial walls constructed of hewn coral, on the right of which stood the house of the Mandarin; which being thrown entirely open, by the removal of the sliding pannels, possessed, in addition to coolness, the very great advantage of excluding the rabble. This building is situated immediately upon the angle which connects the town by another causeway, and is, in fact, the only landing place to the town at low water, the interior being laid dry by the ebb. At the gate we were received by three Mandarins in state, and conducted to the Chief within the walls, who not only went through the customary obeisance, but shook hands in the English style, and taking both my hands in his, conducted me to my place at a small table, at which he first seated himself beside me, but shortly after retired, leaving us to be attended by the others. This, I suspect, was in order to make arrangements outside about the changes which were to be made in the courses. The wine was, as usual, a species of weak whiskey, their *saké*, about half the strength of the customary Hollands, in which they occasionally pledged us.* Boys were in attendance with fans to cool us, as well as to drive away the flies. After having partaken of refreshments, the trays were removed, and train bearers entered, placing before each of the guests a wooden tray, containing small presents of the productions of Loo-Choo, each tray labelled with the name of the Officer, and containing the list of contents. They consisted of specimens of silk, of six varieties, but of very poor material; six pieces of stout cotton, very coarse, and evidently printed by block; fans, paper, umbrellas, and a jar of Saké, and were sent off to the ship the day following, by one of their boats. Our repast concluded with tea, after which I was very agreeably surprised by the question, "Would I like to take a walk, to see the country?" As this could only be effected by going directly through the town of Napa, I consented. The crowd was not troublesome and we had reached the end of the causeway, leading into the town, when I recognized my old friend and ally at Pa-tchung-san, Shanghai (Beaufort). He was manifestly afraid to speak, but the distress in his eye was too evident. I stepped out from my party, and shook him by the hand, but one of the police in the most brutal manner, raised his arm to strike him, thinking, possibly, that the act was his own. My upraised arm prevented this taking effect, but the poor fellow was huddled away amongst the crowd, and I could not again see him.

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* These had red hatchee-matchees, which I was informed designated the Students of the College—as well as secretaries.

Entering the town, we suddenly found ourselves in the midst of the market, and as our appearance had not been foreseen, we found the damsels scampering in every direction, leaving their goods to the mercy of the males. This was the only opportunity we had of seeing anything like comeliness in the lower orders; and some of these were not to be despised. Many of the elders not gifted with charms, quietly sat still, with their backs towards us, pretending to be engaged in other matters, and generally screened by some well-meaning male. From the fair supply of produce noticed in this market, and the persons engaged in purchases we may infer that the use of money was not unknown; or for what possible end could it be forbidden? Our ramble carried us through the town of Napa, und suburb of Pootsoong, and towards the temple where my friend the French Padre resided, returning by the outer line of the town, to the place of disembarcation.

I think there were six junks in the harbour, at the time of our visit; they were all of Japanese build, and of their peculiar model. Two, in particular, appeared to be very neatly built and equipped, and bore the Satsuma emblem on their banners, as well as the quarters. They have been designated by some as wanting in beauty. How has this varied within the short period of my own nautical experience! When Seppings first modelled his circular sterns, how unsightly they were declared! But strict utility has taken the lead, and from the bow of 1810, even of our then clippers, who would have believed that in 1840 the Symond build would almost have changed the features of our navy? Again, in the former period, the extreme beam was retained about one-third from the stem, tapering aft; latterly, the beam, as in some of our most powerful vessels, has been carried well aft, in conformity with Chinese models.

The Japanese models, now before us, differ *in toto* from anything which I have seen; their extreme width appears to be about one-third from aft, tapering directly, and by a very sharp wedge-shaped rising bow, the after-third rounded off not ungracefully, although fully, to the stern. In conformity with this build, in vessels not more than 300 tons, the mast, which is of large dimensions (twenty-eight to thirty inches diameter), is stepped abaft the centre of the vessel, having a slight rake aft, and depending almost for its entire security, on a powerful stay, apparently adapted for a triangular sail, but none has ever been seen upon it. The only sail observed, was a huge square one, composed of narrow widths, of a very flimsy canvas, not sewed together, as in our sails, but laced, so as to be reduced at pleasure, by taking off cloths instead of reefing. This I noticed in the smaller boats off Nangasaki, where the sail appeared to traverse by rings on the yard, and to be divisible into four parts. In the vessels now under inspection, they were in not less than eighty. As the outer cloths were securely attached to their bolt-ropes I can only surmise, that in reefing by this vertical method, the middle cloths are removed.

The rudder is similar to that in use amongst the Chinese, but the tiller is about one-third the length of the vessel, and the rudder being triced up in port, makes this appear as an additional spar. The exterior of these vessels was very neatly finished, and payed with a coat of clear varnish; most of her metal fittings appeared to be of copper; and abaft, where our quarter badges would be placed, they were ornamented by a light lattice work, obliquely forward, or diamond fashion. Having read so much of the unwieldiness and unmanagableness of these vessels at sea, I am totally at a loss to account for it from their build. It must, therefore, depend on the enormous mast, the great surface of rudder exposed to the waves, or to the want of triangular sails of good canvas, to enable them to work to wind-ward. Under English management, or under the supposition that I had met with one of these vessels in distress at sea, I have not the slightest doubt that we should have found her trim, and got sailing out of her by adapting lighter spars; for from her very extraordinary build, I am perfectly satisfied (having witnessed the same models on a smaller scale impelled by sculls,) that they are not wanting in velocity, if properly handled.

The vessels I am now speaking of, are not to be confounded with the unwieldy Chinese junks, which are also navigated between Japan, Loo-Choo, and China. The only comparison which would at all approximate, is the Lorcha of Macao, or the pilot boats that look out off the Ladrones for vessels bound to Canton river; and it is well known these vessels sail remarkably well.

Our examination was not entirely confined to the water; the masonry and general construction of what we have hitherto viewed as their defences, excited my interest. The entire work of the tongue of masonry, extending sea-ward, from what I assumed to be the Custom-house, is faced with accurately squared blocks of the Coralline limestone, which abounds on the coast-line; but from the very confined space between the walls and its unfitness for purposes of defence, I am not disposed to attribute any design of this nature in its construction.

In the first place, it is too high for men or guns to fire over, and in the next, it is not more than eighteen inches in thickness: far too slight to withstand either the concussion from their own artillery, or to resist an attacking force. The work opposite, westerly, is liable to an equal objection. It has the same thickness of wall, but sufficiently low to fire over, without affording any protection to its defenders. The works noticed at Japan, were even worse, as from the clear view which we had of their batteries, on the southern side of the entrance, the parapet did not appear to rise more than a foot, if so much.

The characters in use by the people of the Meia-co-shimas and Loo-Choo, could not be comprehended by our interpreter, although upon a very close scrutiny, by others at Hong-Kong, it was pronounced to be a species of Chinese running hand, sometimes practised by the merchants. It bears no resemblance whatever to the Japanese character.

At Japan, Quelpart, as well as Loo-Choo, colleges are established for the education of the upper classes; the established language of the schools, in all cases, being that of the court-dialect of China. In this language all official correspondence to strangers is framed, as we found in all the places visited, and which were afterwards translated at Hong-Kong. The students at these institutions have peculiar dresses, probably arranged by the state; those of Japan were pointed out by a bluish-grey mantle, and those of Loo-Choo, by a kind of dark-coloured cassock, with upright collar and red hatchee-matchee caps. These, at our state entertainment, performed the duties of attendants. The material of the cap or Hatchee-matchee, appeared to be of coarser texture, and a duller red than those worn by the other authorities, or secretaries, who are also entitled to this distinction; those only wearing purple or yellow are entitled to high rank. The remark, that the same written character, of the Chinese, is understood in Korea, Japan, Loo-Choo, or China, although different in expression of sounds, ceases to become a subject for speculation if we consider the Chinese language as merely an elaborate painting. The language of flowers is fully understood throughout the East, however great may be the variation in the oral expressions made use of to represent the same idea. Two cases, clearly in point, will illustrate these remarks, as to the Chinese court dialect. Our interpreter was unable to converse *viva voce*, with any of the people we met, excepting the learned in his language, and yet neither party was at a loss to make themselves understood by the intervention of paper and ink. The use, therefore, of the Chinese written character at Loo-Choo, cannot be assumed as involving the question of the subjection of these Islands to China, any more than the numerous French terms in our public courts, or records, would imply our dependence upon that power.

At the periods of the visits of foreigners, the superior classes, alone, are probably better dressed, and are permitted to mix with the strangers; but having had some experience in these matters, having almost lived with the people of the Meia-co-shimas for six weeks, having travelled into the interior of Loo-Choo, and taken the people unawares, in their customary habits, having closely watched the Koreans, Japanese, &c., I am not disposed to accord to any of them the characters of neatness, cleanliness, or purity of morals. I believe them to be less cleanly than the Chinese, who may be generally noticed at the doors of their houses, after sun-set, making every effort to wash off the accumulation of the day. I never witnessed any such attempt at extensive ablutions amongst any of the island races, and when they have by chance exposed the skin, it presented a coarseness which indicated frequent, if not complete, exposure; I am, therefore, strongly of opinion that their customary garb is but scanty. This, too, I assume to be one of the most important objections to our visit; the necessity of perpetual dress and watchfulness must be most irksome, and, probably, with their limited means, expensive. The working-classes are invariably in such a tattered, filthy state, that one naturally avoids them, fearing the effects of contact. From frequent intercourse, we found our attendants insensibly drop into our habits, (and their own naturally), of wearing straw hats; and before leaving Loo-Choo, three varieties were procured for me of very substantial manufacture.

As we had not an opportunity of examining the display in their market, or of ascertaining their general resources for subsistence, we can only refer to such articles as came immediately under our notice. I think, however, that from my experience during my former visit in the 'Blossom', in 1827, coupled with the present, added to the frequent display of the contents of their canteens, I may give a tolerable guess as to their general travelling diet. I do not on any occasion remember to have fallen in with meat; fowls, cut into small pieces, rice, hard-boiled eggs, the *Sepia*, *Octopus*, varieties of shell fish, pickles, or rather vegetables cured in salt, cut up small, and mixed together, predominated as the contents of one vessel; sweetmeats and rice cakes in others, concluding with diminutive white-metal pots, containing Saké. The tea equipage constituted a separate canteen, and this preparation was of the lowest scale of Chinese produce. It is true that they cultivate the tea plant in Loo-Choo, but they explained with a contortion of countenance, that it was unfit for the consumption of the upper classes.

The market, according to our French friend, affords the customary vegetables to be met with at Macao, excepting those resulting from European seeds. Pumpkins, Melons, Cucumbers, Peaches, Pears, Figs, Brinjoles, Vegetable Marrow, Indian Corn, Beans, Sweet Potatoes, Eggs, Fowls, Hogs and Bullocks, were amongst the supplies sent off to the ship; and although they express themselves as a very poor people, I saw enough of their ground under cultivation, as well as of the quantity of green looking substance in the evening market, to feel that the poverty must depend on the circulating medium.

Upon the eve of departure, the following document was presented, but it was fully understood that it was a formality that they were compelled to observe, and that if we should return, that it had better be to Loo-Choo than to the Meia-co-shimas, " as they had more Mandarins to help us at Loo-Choo."

OFFICIAL DOCUMENT.

The duly prepared petition of Ching-yuen-kin, the acting local Officer of the Napa Keang Territory, earnestly beseeching that a stop may be put to Surveying, in order to set at rest the minds of the people.

According to the reports from the local authorities at the two Islands of Tai-ping and Pa-tchung, of the past year, Kwei-maou (1844) to the effect that a vessel belonging to the Great English Nation had arrived, from which many men had landed, and during several tens of days employed themselves in sounding the depths of the sea, and measuring the extent of the land.

That, although among the Englishmen there had been hitherto propriety of conduct, among the natives there existed great apprehension; so much so, that they had neglected their customary occupations, and were in a state of much consequent distress.

Again; during the fifth month of the present year (June, 1845) the local authorities of the dependencies of Pa-chung and Na Territory (Y-nah-koo), made a similar statement.

When these reports from first to last reached me, I reflected that our mean country is in an inferior state of cultivation, and of small extent; all our islands, likewise, are not large, there is no abundance of productions, and they are scarcely sufficient to maintain life, and when storms and droughts occur, we are reduced to the utmost straights.

I would therefore petition your Excellency to view the sufferings of our small country with a condescending eye, and in the exercise of that benevolence and tenderness which so well becomes a great nation, in its dealings with one so much its inferior, to desist from sailing round the islands, and the measuring of the territory. So from this country, as a centre, to the most remote of its dependent islets, shall the people at their peaceful occupations, beseech Heaven to shower unnumbered blessings on the heads of their benefactors.

This is an earnest petition.

A respectful petition from Ching-yuen-kin, acting Officer, of the Napa Keang Territory.

Taokwang, twenty-fifth year, seventh month, twentieth day.

(20th August, 1845.)

Several considerations naturally arise upon the face of this document.

In the first instance, we are assured of the subjection of the Meia-co-shimas. In the second, we have the acting Officer in the command of the southern district of Loo-Choo, clearly taking into his own hands the administration of this affair without allusion to any *superior*;

and I was assured from the parties who delivered it in state, that it was from "*their Emperor*", to be construed *Ruler*; and yet this *Ruler*, calling himself merely *acting local officer*, despatched to meet me on my return from Japan (and who entertained me on shore), assumes the supreme authority. Again, we hear of the tribute sent from these islands to China and to Japan: *silver, gold, and other valuable articles.* From whence, with their *repeated* assertions of poverty, nay, almost *destitution*, is this tribute to be collected? Mines, they have none, that we are aware of, and viewing the country with a geological eye, I am unable to trace any metalliferous rock. As soon, judging from its crust, would I seek for the precious metals in Bermuda.

It is highly probable, as I before suggested, in the case of the Meia-co-shimas, and from the ruined fortress on the summit above Sheudi, the same argument will apply, that the tribute from these regions in olden times resulted in the piracies committed by those frequenting these islands; and that as these powers were suppressed, their glory has faded until the present day. It is most likely that when China ceased to send warlike expeditions from her shores, they quietly fell under the sway of Japan, which has probably lent her protection by forming them into penal settlements. That these penal settlements extend as far south as the scene of our disaster, we know, as a chief, with *two swords*, was met there, who wished to escape to the 'Samarang', such, at least, was the impression of my Coxswain, who was sent to examine the bay for water; but the swamping of the gig and loss of instruments, prevented my making further examination.

CHAPTER XII.

HONG-KONG AND THE PHILIPPINES.

Leave Loo-Choo—Touch at Pa-tchung-san—Botel Tobago—Arrive at Hong-Kong—Refit and sail for Batan—Fall in with a Bremen wreck—Reach Manila—Nicholas Shoal—Make Term Day Magnetic Observations—Arsenal of Cavite—Fortune Island—Looc Bay —Lay in a store of wood—Fever caused by the fermentation of wood when damp—Apo Island—Fall in with a nest of Pirates. Island of Mindoro—Skirmish in the Bay of Ylin—Convenience for obtaining supplies—Town of Mangarin—Garza Island—Semirara—Pirate Island—Panagatan Group—Shoal of fish— Cagayancillo — Inhabitants—Structure of the Island—Calusa—Samboanga—Inland Excursion—Country round Samboanga—Examination of Shoals extending from the Santa Cruz Islands—Courtesy of the Governor, Colonel Figueroa.

On the 22nd of August we took our final leave of the French Padre and our Loo-Choo friends, and as our supply of provisions would not allow of any deviation from the shortest route, we were compelled to abandon all further examination of the Raleigh rock, Tia-usu, and islands adjacent. Our course was, therefore, shaped for Pa-tchung-san, which, after a short run of four days, we reached on the morning of the 26th, anchoring in Port

Haddington about 8, A.M., and having obtained observations for the Chronometers, sailed the same evening.

Our friend Kieu-Anchee was, I thought, rather tardy in making his appearance, but on his arrival, he endeavoured to explain this apparent inattention, by stating that it arose from his anxiety to keep a promise which he had made, to procure two monster specimens of the large furbelowed Clam (*Tridacna gigas*), and which he informed me, his people would shortly bring to the beach. His apparent coolness, which I attributed mainly to fresh instructions from Loo-Choo, soon wore off, and I thought that I could trace a certain nervousness, or a fluctuation between duty and friendship, the latter certainly predominating. He would scarcely credit my resolve to sail immediately, and left me very precipitately to obtain vegetables, and other little presents, as well as to hasten those conveying the shells. Time, however, was too valuable to us, and without the satisfaction of a formal leave-taking we were soon distancing the port, and, with a fine breeze, cleared the dangers before dark.

The breeze deserted us on rounding the western dangers, and between these islands and the southern limit of Formosa, we were harassed by contrary currents and light baffling airs, reaching Botel Tobago on the 30th.

In this neighbourhood we continued to make many traverses, taking advantage of every change in order to cross the position assigned to Gadd's Rock, or Cumbrian Reef; but without noticing the slightest indication of ripple or breaker, sufficiently distinct to warrant the idea of a shoal. The sea was perfectly smooth, and as our latest authority, Captain Ross, assigns a depth of twelve feet over it, I imagine that it only breaks in rough weather. Soundings of 300 fathoms were obtained on one occasion. The currents proving too strong for the prevailing winds, and having made several fruitless attempts to clear the Vele Rete rocks, endangering us constantly, in the event of calm, of drifting either on them or Botel Tobago, I determined, after seven days detention, on making southing, and obtaining a fresh departure for our Meridian distance from the Batan Islands.

On the morning of the 6th of September, I joined the 'Royalist' with the Chronometer, and leaving the 'Samarang' to make her way to the westward, reached San Domingo in time for the Observations. However, not much progress was made by the 'Samarang,' for the next day, at noon, the breeze had barely enabled her to hold her own, about four miles to the westward of the town, where we rejoined, and pursued our course more satisfactorily, taking advantage of the southerly current between Batan and Sabtan, after which I knew that we should fall into the prevailing set to the south-west. I would strongly advise vessels similarly circumstanced, to lose no time with an adverse wind in the vicinity of Formosa and Botel Tobago, as the currents setting to leaward neutralise what would otherwise be deemed a fair working breeze. Whereas, by standing boldly to the southward until attaining the Latitude of the S.W. point of Ibayat, the south-westerly current will be gained. Had I been free in my choice, I should, without hesitation, have steered direct for Batan, in the first instance, and reaching it on the 1st of September, have gained, at the very least, five days.

Nothing worthy of notice occurring, we reached Hong-Kong on the 14th, where we found the 'Castor', 'Vixen', 'Driver', and 'Espiegle'. Capt. Graham, of the 'Castor', still Senior Officer. On the 15th, the Admiral made his appearance in the 'Agincourt', accompanied by the 'Vestal', Capt. Talbot, 'Dædalus', Capt. M'c Quhæe, and Wolverine, last from Manila, but previously from the expedition to Maludu Bay, where the stronghold of Seriff Hoosman, before alluded to in this work, was destroyed by the boats of the Squadron, under the command of Capt. Talbot of the 'Vestal', and Capt. Lyster, of the 'Agincourt'. Our refit having been completed, we quitted Hong-Kong on the 1st of November, accompanied by the 'Royalist', our first rendezvous being San Domingo, Batan. On the evening of the 3rd, when near the Pratas Shoals, a sharp gale set in from the N.E., which continued to increase, parting us from the 'Royalist'; this prevailed until the 9th, and on the 19th, we anchored at Batan; as the 'Royalist' was not there, and did not arrive during our stay, I began to feel rather anxious about her. Before communicating with the shore, the authorities sent off, apprizing me that the Bremen brig, 'Express', from Mazatlan, bound to China, had been wrecked in the Bay of Mañanïoy, on the eastern side of Batan, but that the crew and property were safe. I had already sent to offer assistance, and the conveyance of her crew to Manila, when her supercargo, Mr. Vischer, came to pay his respects, and to request that I would receive his cargo, consisting of specie to the amount of 85,000 dollars, which had been saved. To our mutual surprise and gratification, he proved to belong to the firm of Kayser Hayn, and Co., of Mazatlan and Acapulco, to the principals of which I had been under great obligation during my visits to those ports in the 'Sulphur', and Mr. Vischer and myself had also met under peculiar circumstances at Manzanilla. After very few communications relative to his disaster, he was assured of a home on board the 'Samarang', as well as passage for his crew, &c., to Manila; and taking into consideration the absence of any other authority, measures were immediately adopted for the security of his cargo saved.

Previous to my arrival, an engagement had been entered into by a young Spaniard, belonging to the province of Ilocos al Norte, to purchase the hull and gear of the brig, and to carry the Master, crew and Supercargo, for a stipulated sum in a native vessel to Manila. Interference, on my part, was delicate, but the Supercargo preferred accompanying his freight in a sound bottom, consenting still to pay the stipulated agreement, if the vessel was found fit, and that he would not flinch from any part of his contract if his master and crew would consent to risk their lives with the contractor, or, failing in this, the original forfeiture, as agreed, of half the amount. It is necessary, in order to comprehend this matter, properly, to understand, that unless this vessel could be safely navigated to Manila by the Bremen crew, that the sum agreed on for the wreck (the valuable parts of which were to be embarked) would not be forthcoming; in fact, that the sum offered, was upon this condition.

It was apparent to the eye of any seaman that the vessel was unfit and unsafe, and further, that the lives of the Bremen crew would be jeoparded. Still the Bremeners most handsomely declared that they would stick by their friend so long as a fair chance remained of fulfilling his contract; and to prevent risk on all sides, as well as to afford assistance, our crew aided in getting the vessel into the water. When this was effected, and after great difficulty, she was secured in the anchorage of San Vicente, near Ivaná, it was found perfectly impossible to proceed in her; arranging their money affairs, therefore, very much I believe to the satisfaction of all parties, the Bremeners joined the 'Samarang' with lighter hearts, and our own immediate affairs settled, we quitted this, our pet island, on the 30th of November. As the breeze, during the night and succeeding day, gave us a velocity of between eight and ten knots, under small canvas, our friends congratulated themselves on what they deemed an *escape*.

Up to the period of departure, there were no signs of the 'Royalist', but having given Manila, as well as Hong-Kong, as secondary rendezvous, in the event of accident to spars, which was *suspected*, I still looked for her at the port we were now bound for. In this I was not mistaken, as we found, on being boarded by the guard-boat, passing the Corregidor, that her arrival was notified some days before, and on our passing Cavite, on the 6th of December, her signal was descried at her mast-head, showing over the Arsenal. Calms and variable winds prevented dropping anchor off Manila until late that evening, but on the arrival of her Commander, Lieut. Ogle, he acquainted me, that in the gale experienced off the Pratas, he had sprung his fore-mast badly, and parted his bobstays, and finding it impossible to preserve his spars under the heavy head sea which prevailed, he had run hither to repair damages. He also acquainted me with the very great courtesy which he had experienced from the Governor of Manila, and the Brigadier commanding the Naval forces of Spain in the Philippines, as well as the kindness and facilities afforded him by Captain Villavicentio, Commandant of the Arsenal at Cavite. After paying my respects to His Excellency, General Claveria, Governor-General of the Philippines, and thanking him for his attention, I suggested the propriety of making a minute examination of the San Nicolas shoals, which at this moment presented new features, from the failure of a plan conceived, I believe, by Capt. Salomon, the previous Captain of the port, for converting it into an island. This was to be effected by sinking a vessel charged with soil and young Mangrove trees, immediately on the crest of the bank, on which there was previously ten feet, and by filling around her with stones it was hoped, that in a few years, the coralline zoophytes would agglutinate all so firmly, that a conspicuous island, and, ultimately, a light-house would beacon this danger. Nature, however, rebelled, leaving a pile of stones and the fluke of an anchor, over which there is now about three feet at low water. Permission was granted, and during our detention for the 'Royalist', the boats found occupation in outlining this new bank.

Great difficulty was experienced in meeting with a spar fit to replace the injured fore-mast; several were tried, but proved unsound, and as her old mast was too heavy, and none but those of treble its density could be met with, it was at length determined to remedy the defective one, by adding hard wood head and cheeks. This was effected about the 2nd of January, 1846, and on the 4th, the 'Royalist' rejoined us, ready for sea. By the kindness of the authorities we were permitted to make our term-day Magnetic Observations at the end of the Commandant's garden, in the Arsenal of Cavite; the entire ground about Manila being charged with old guns, &c., which vitiated the results. After which, having completed our stores at Manila, we took our final leave of Manila Bay on the 10th. During the greater part of our detention, the 'Samarang' had anchored immediately off the Arsenal at Cavite, in order to afford the aid of our carpenters and armourers, in the refit of the 'Royalist.' During the whole of this period, both Lieut. Ogle and myself received the most marked hospitality and kindness from Capt. Villavicentio, as well as every assistance in his public capacity as Commandant of the Arsenal. To him I am also indebted for most important information relative to the Illañon pirates about the region of Mindanao, as well as directions for many of the harbours visited by the gun-boats, and which were almost unknown or entirely omitted upon the Charts supplied to us.

I cannot take leave of Manila without repeating my expressions of gratitude for the kindness experienced from my friend Mr. Otadui, particularly in my communications with His Excellency, General Claveria, and I feel persuaded, that to his manner of interpreting my wishes, I am indebted for the very marked favours which were conceded. Manila was, indeed, throughout our rambles in this part of the world, the pleasantest spot we frequented, and to the society, generally, all are more or less sensible of many pleasant reminiscences.

Quitting Manila, and acting upon information from the Commandant at the Corregidor, we searched for a shoal, on which the gun-boats had anchored, near Fortune Island, and before sunset that evening the 'Samarang' and barges had taken up their stations, in nineteen fathoms, precisely agreeing with our information. On the day following, during our detention for the 'Royalist', sent to Manila for final despatches, Observations were obtained on Fortune Island, and the following morning, on rejoining her we stood on to the southward, in search of a new harbour, termed Looc Bay, situated on the eastern side of the Island of Luban. As these islands are exhibited on a very small scale upon the Charts, no one would dream of seeking for an asylum in such an unfrequented spot; but the information of my Manila friends had given such an interest to this locality that I determined upon its examination, as it possibly might afford shelter to distressed vessel coming from the Strait of St. Bernardino, and exposed to the "northers", which are frequently experienced on opening the great Bay of Manila. Our visit cleared up one point which might have proved fatal to the 'Royalist', as she had been directed to pass through between Luban and its neighbour; a passage which was discovered from our mast-heads to be completely barred by rocks. On the morning of the 12th of January, we dropped our anchor in Looc * Bay, and proceeded with its survey. On the

* The term *Looc*, is, in the Malay and Bisayan langague, Bay,

day following I visited the village in the depth of the bay, and succeded in obtaining wood, water, Bullocks, and vegetables. We had been informed that Bullocks and stock would be met with here in greater abundance and perfection than at our garden of Eden, Batan. This we found to be totally at variance with fact, as well as the disposition of the population. All the cattle produced were infinitely inferior, and dearer; and with respect to vegetables, Pumpkins were the only kind to be obtained, and those not without some difficulty. The supplies at this spot may possibly depend upon the notice given, and are, doubtless, kept concealed in the interior, as it was upon this place that the Illaños, a few years since, made a descent over the neck of land, which is accessible from the south, ransacked the village, and carried off all the marketable boys and girls. Our arrival there on the first day probably excited suspicion; but when we did pay our visit, we found the prices most exorbitant, fowls being nearly as dear as in Manila. The bay is pretty free from dangers at the mouth, and good holding ground will be found in depths between ten and twenty fathoms. Within the former depth it suddenly shoals, and several lines of coral ledge bar the inner depths of the bay from *direct* access, although excellent shelter would be found by a vessel moored between these barriers, to which they might easily be conducted. At the village, a brisk rivulet supplies most excellent water; but boats cannot fill excepting at high water. We found large stacks of very nicely prepared fire-wood, probably intended for Manila

therefore, *Looc Bay* is incorrect; as the town is patronized by San Rafael, the Bay should bear his name.

consumption, and as as it was very reasonable and clean, we completed our available stowage with it.

Those who are curious in the investigation of the causes of fever and other attacks to which seamen are liable, seem to have overlooked this, one of the most obvious of mischiefs, on shipboard. In the year 1830, my attention was directed to this subject; in the fitting and storing of H.M.S. 'Ætna', not a single article of moist wood, or other matter which could ferment in the holds, was permitted to be embarked. All casks were deprived of wooden hoops, and were carefully white-washed and dried (under the direction of Mr., now Commander, Town, at Clarence Victualling Yard), the flour was packed in water casks, and the dry provision in tanks. Great circumspection was exercised throughout the period which she remained under my command; and although my predecessors, Officers and crew, in the 'Hecla' died, or were invalided, still we continued healthy; and but one soul died in the course of three years and a half, chiefly on the most unhealthy parts of Africa, situated between Sierra Leone and the Gambia; and this man was a supernumerary. Nearly the same good fortune attended the 'Sulphur', until the fever of China attacked those exposed to the damp ground on Canton Heights. I am therefore particular in alluding to this purchase of dry wood, an acquisition which I never lost sight of, and frequently, nay, invariably, looked after, to the interest of my Purser, as well as of my crew. I feel satisfied that to the fermentation resulting from the Mangrove bark, which peels off on drying, and falls into the lower part of the hold, where it meets with other moist substances, may be attributed many of the unaccountable affections to which seamen are subject in tropical climates.

The composition of the shores of Luban, as far as we were able to inspect the crust, appeared to be a mixture of clay and Mica slates, frequently traversed by dykes of quartz, and occasionally of carbonate of Lime. The northern point of the bay, which is termed *Punta Tumbaga* (or Copper Point) is of a deep greenish hue, evidently charged with the oxide of this metal, and in some cases, where the water filters through, apparently in the state of the blue sulphate, discolouring, and precipitating on, the point of my penknife. The authorities at Manila designate the island as rich "in minerals."

Having completed our examination of this bay, the ship and 'Royalist' were directed to pass round by the eastern end of Ambil, and pick up the boats before entering the passage between Luban and Isla Cabras. Keeping the boats under my direction, we proceeded within the islands, examining the indentations of both for fresh water or anchorage, which I had been informed were to be found convenient on the western side of Ambil. A very small harbour for boats was noticed, in which I observed one of their Faluas at anchor; but as the spot was insignificant, I did not lose time by further delay. About noon, we were abreast of a very large village,* situated in the northern centre of Luban, and, as we had been informed, protected from northerly gales by a very extensive coral patch very near the water's edge. Nevertheless I should have hesitation in risking one of Her Majesty's Ships in such a very exposed situation. Rejoining the 'Samarang', and favoured by a gentle breeze and the most beautiful weather, we grazed Cabras Island and rounded to under its southern face, continued surveying its southern limits, and by sunset found secure anchorage under its lee, where the barges were hoisted in board, preparatory to a run for the southern end of Mindoro. Quitting Cabras that evening, on the morning of the 16th we effected a landing on the inner Apo Island, for Observations to fix its position, the ship having orders to preserve a distance of five miles, and the 'Royalist' to extend her distance W.N.W., in sight of the ship, in search of a shoal said to exist in that direction, which she fortunately found, and dropped her anchor on it; the least water found by her boats being three fathoms, and the distance from the lesser Apo rocks being determined to be eleven miles, bearing N. 73° W. true.

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* Tagbach.

The cutter, with her gun, had been ordered to accompany us, in case of requiring measurement for base; but shortly after landing upon this apparently desolate rock, we noticed two boats approaching from the larger island, and go to the rear of our position. When opportunity admitted of my quitting the instruments, I proceeded to examine the rocks, and, very much to my astonishment, discovered a complete nest of what were, doubtless, pirates, when convenient prey offered. The interior of this coralline mass which was much worn by the sea, presented a series of cavities, which were taken possession of as chambers, and game cocks, the almost invariable companion as well as decoy bird of these people, might be noticed, tethered in every direction. The exuviæ of Turtle, of several species, dried fish, nets, &c., afforded a fair pretext for the harmless and peaceable pursuit of fishermen; but there was that about the manner and restless eyes of the leaders which implied, we know that you are too strong for us, and your ship would not suffer you to be wronged with impunity; otherwise, had the gig been alone, I suspect that they would not have hesitated on taking us to a better market than the Apo Islands afforded. Their number, if we saw the whole of them, might be reckoned at thirty, but I suspect that many were concealed in the chambers, as well as others, allies, on the great island, where they had, doubtless, left their women protected. As due notice of this important nest was given to the Spanish authorities, it is to be presumed that long ere this, their vocation has been made a matter of stricter investigation than I was entitled to undertake. I am perfectly satisfied that any merchant vessel becalmed near the greater Apo Island would easily be captured by these people, and her absence, probably assigned to foundering.

The position of the inner Apo Island, or rock, was determined to be in Lat. 12° 40′ 4″ N., Long. 120° 24′ E., distant a mile and a half from the greater island, which is covered with trees. A reef extends off the western point of this latter island. The passage between the two islands is deep, and all the dangers are visible in clear weather; we did not obtain soundings with sixty fathoms in the channel. The light airs during the night having prevented our progress towards Mindoro, a landing was effected on one of the nearest Calamianes, and Observations obtained for correcting a partial survey made in our progress to Manila in December last. From thence we stood across towards Mindoro, and shortly before daylight found ourselves in the vicinity of land which the Charts did not indicate. In the morning we stood into the bay, formed by the Island of Ylin and Mindoro, anchoring near the Island of Garza, upon which I determined to establish my principal station.

The south-west portion of Mindoro, including the Islands of Ylin and Ambolon, had long occupied a suspicious position on the Charts, and reefs were reported to extend off the latter Islands for some miles to the westward. This being one of the remarkable projections in the *main road* of these seas it was important that its actual dangers should be delineated. Further, the entire group of islands contained between Mindoro and Panay, were so grossly in error, under the loose appellation of "the Semiràra Group", that navigation was dangerous without a pilot. From my informants at Manila I was led to expect safe channels between the Islands of Ylin, Ambolon and Mindoro; and that water and refreshments, so important to vessels making the passage by this route from Batavia, Macassar or Samboanga, might be procured. These were objects of consideration also for the health and comfort of our crew, and always most anxiously sought by vessels employed on this special service. Indeed, it was in the immediate vicinity of this part of Mindoro that we fell in with the 'Young Queen', returning from the Kotai river to Manila, in 1843, in distress for water, which, had we been possessed of certain information, would have enabled her to supply her wants without further anxiety.

No signs of inhabitants were noticed in the neighbourhood of the great bay, formed by Mindoro and Ylin, but some stray huts were noticed about the cleared ground upon the latter island.

Our operations proceeded without accident until we rounded the west point of Ylin, and came upon the vicinity of the village of that name, situated in an open bay facing the north-west. I was then pulling to a station on that side of the channel, when a party of natives showed themselves on the brow of the hill, and shot an arrow at me, which missed. At this time I was unarmed, and in a light extra gig used for landing over the reefs; some delay ensued before my own gig came up, when the assailants were chased, and made good their retreat somewhat diminished in valour, after one or two ringing shots marked the branches in the direction in which they had fled. To prevent further accident, I pulled immediately to their town, and giving them to understand that any repetition of such pranks would meet with severe punishment to the community, measures were taken by the Alcalde for preventing it. The chief spokesman, although not the Alcalde, seemed to possess great influence over the village, and from the general tenor of his conversation and questions I shall not, perhaps, err very widely in assuming that he is connected with the pirates. He was a complete pilot for all the creeks and ports from Manila to Samboanga, and the pirate haunts as far as Sooloo. He was acquainted with several merchants at Manila, but from his intimate knowledge of all the pirate haunts and practices, he must have been in closer contact than the gun-boat crews to which he intimated that he formerly belonged.

We found a most excellent run of water, but difficult to embark, owing to the shore being dry at least 200 yards from the mouth of the stream, and the tide only admitting our heavy boats at high water. A very snug little boat-harbour is formed within the coral reef, and anchorage for the 'Samarang' was found at a convenient space without it. Fowls, eggs, grain and vegetables were procured very reasonable; and our informant stated that we should meet with plenty of cattle and stock at the town of Mangarin, situated near the northern end of the channel between Ylin and Mindoro. Moving thither, the 'Royalist' was securely anchored in the very snug little Port of Mangarin, formed by the extension of a tongue of Shingle across the mouth of its bay.

My visit to the town of Mangarin was fruitless; very little to be procured, and that exorbitantly dear. The Padre being absent, Bullocks were not to be had; indeed, our visit appeared to discompose them so much that I was quite at a loss to account for the hostile complexion which they seemed to assume. Our purchases amounted to six or eight eggs, and heartily disgusted with their proceedings, I left them to discuss the motives of our visit, which, no doubt, had some superstitious foundation.

When we call to mind the present state of the natives of Luzon, even in the vicinity of Manila, where the Governor did not consider us safe without a guard of Cavalry, lest our instruments should excite their superstition; and the additional circumstance of one of our countrymen having been very severely wounded because he possessed a few bottles of beer, which they fancied was poison, it will not appear at all extraordinary that these people, never visited but by the crews of the Faluas, as ignorant nearly as themselves, should feel alarm at the number of boats, men, and instruments which they met at every point. The village of Ylin, therefore, is the only place where I would recommend a vessel to call for supplies; there they can be obtained cheap, and good humour seems to animate all classes.

The country in the neighbourhood of our survey was particularly mountainous, but the coast-line for a great distance inland on Mindoro, traversed by estuaries forming an extensive swampy Mangrove Archipelago. Not so the Island of Ylin, it was accessible on all sides, and some of its southern cliffs rose abruptly to the height of 200 feet. The island is well wooded, but excepting on the N.W. near the village, but very little cleared land. Another portion, in a deep bay opposite to the ship, appeared to be undergoing the same process of clearing, and near this spot another of our boats was treated with a flight of arrows, probably at the same time that they paid me the compliment. Ambolon is uninhabited and uncultivated. It is almost, if not quite, divided by a swampy lagoon, forming a small harbour on the west. The rocks throughout these parts are of slaty mica schist, excepting the south point of Ylin, which is a compact coralline limestone with caves containing stalactites, &c. We found all the channels between the islands navigable, but requiring caution. The dangers reported westerly of Ambolon were not discovered; none exist westward of a north and south line grazing that island, within half a mile, but several within it are now placed on the Charts. The general scenery is pleasing, some of the sequestered bays delightful, and our cruize of six days in the boats formed quite a pleasurable excursion. Determined to prove the security of the channels, the 'Samarang' was taken through the Ylin Strait, and anchored off the village of Ylin, where we contrived to take on board about 800 gallons of water during our detention for stock. This was more for the purpose of proving the practicability than as a watering service; the spring from which we obtained it was at the first cliff south of the town. The position of Garza Island in the great bay, was found to be in Lat. 12° 12′ 26″ N., Long. 121° 9′ E., Var. 0° 23′ 34″ W., Dip. 11° 22′.

Quitting Mindoro we steered for the Island of Semiràra, and commenced its survey. It is not the island so named on the Charts, but one north of it. Nothing worthy of notice occurred here; we observed a town upon the crest of a hill with the Spanish colours flying, but could not induce any of the people either to visit us or shew themselves near the shore. The island contains a large quantity of cleared and apparently fertile land, with some elevations, but rounded, and seemingly under cultivation; the prevailing rocks are slaty on the elevations but coralline at base.

About this period, finding our provisions diminish rapidly, and fearing that our intended operations on the northern coast of Borneo might be cramped, I determined on taking the available provisions of the 'Royalist', and despatched her to Singapore for fresh supplies, with instructions to rejoin at the Island of Balambangan, and to call in at Sarãwak for any communication which Mr. Brooke might be able to furnish, at the same time sending him an invitation to join us, and recruit his health by the sea air and amusement which he might experience at Tampassook, Borneo, and the other rivers on the northern coast. On the evening of the 6th of February the 'Royalist' parted company on this service, carrying our despatches for England.

From Semiràra we revisited and connected the Panagatan group, on the eastern islet of which we found the remains of a temporary Malay village, and one of their party dead. He appeared to have been left there, as he was not buried but remained in the position in which he had died, to all appearance, in agony. His clothes were loosely drawn round him, and it occurred to me that he might have met with foul play, but I was unable to trace any symptoms of violence; it is possible that he might have been wrecked in his canoe, and died from starvation. From this island we proceeded to one directly east, being that to which the name of Semiràra is generally applied. As it had no name, and had been designated by our Ylin authority as inhabited by *Orang jahat* (bad people), it received the temporary name of Pirate Island. It is apparently capable of cultivation, the principal part presenting a smooth gently undulating surface, terminating at the western extremity by lofty abrupt cliffs. No convenient anchorage was obtained, although necessity induced me to moor the ship on the edge of the coral bank in twenty-five fathoms, with the kedge little beyond her own length in three fathoms, and at sixty yards seaward no bottom with 100 fathoms. A lake of fresh water was found, and symptoms of inhabitants were noticed at the eastern extreme, where they had, after the fashion of the Bajow tribes of Borneo, been making salt, by boiling sea-weed in earthen vessels. Another island, not examined by us, was situated to the E.N.E.

Quitting Pirate Island, our attention was directed to a small islet observed from the highest peak of Pirate Island, which proved entirely new; it was well inhabited, and designated by the natives, who were Bisayans, or, a colony of *Los Moros*, Magñigñin. From their conversation, which was maintained between bad Spanish and Bisayan, they exhibited little affection towards the Spanish Government, and having been described by our Ylin interpreter as bad, were, doubtless, friends of Los Moros. The island is small, with a considerable elevation in its centre, and has an enclosed palisaded village on the S.W. The position of the western peninsular clump was determined to be in Lat. 11° 36′ 10″ N., Long. 120° 37′ 25″ E.

From hence we returned to Panagatan, after which, our course was directed for the Cagayanes, with the intention of completing the survey commenced in December, 1845. Shortly after midnight on the 13th of February we struck soundings in fifty fathoms, and hauled easterly into deeper water, until the following morning, when passing down the eastern side of the shoals, we selected a small coral islet, discovered on our former visit, for our main position. Having obtained all that we required here, we then proceeded to search for a line of shoals northerly, said to extend fifty or sixty miles, and on which we had already obtained the one cast of fifty fathoms. By dint of very close watching we managed to keep upon the edge of the soundings until noon the following day, the least water obtained by the ship being eight fathoms and a half, although from the ripples noticed, it is highly probable that dangerous spots exist, but being out of sight of land can only be fixed by Astronomical sea observations, and from the strength of the currents, and prevalent light airs, unsafe for a sailing vessel to examine. At the moment of rounding the northern extremity of these patches our reckoning placed us thirty miles, north half east, of the south-western end of the Cagayan group, or twenty-six miles and a half north of the highest detached northern islet. Early on the morning of the 16th, having kept on the edge of the soundings, we approached the northern breakers of the Cagayanes within one mile, and taking the boats, in addition to my gig, quitted the ship, with two days provisions, in order to outline the dangers and finish the coast-line, the Officer left in command having instructions to look out upon us for signals, and to ascertain the general limits of the soundings off this group. The second master had also been detached in one of the cutters to obtain a station on the north-eastern island, rejoining the boat division by sunset; where he found us very snugly encamped upon a sandy tongue, on which we spent the night. Whilst our supper, or more properly dinner, was in preparation, I strolled to the end of this tongue to view several shoals of fish which were playing in the eddies, wishing much for a net to encircle some for our repast. Hardly had the wish been conceived before several sharks made a desperate dash amongst them, and in the course of the panic forced several on shore at my feet, the sharks themselves literally grounding. The suddenness of the dash, added to some little fear that I was the object they aimed at, and their exertions to regain the water, prevented my being so alert as I might have been, and but two of the fish were secured for our repast, much to the chagrin of my Sandwich Island attendant, who sprang at the *sharks themselves*, thinking them better booty. In the morning we recommenced operations, reaching the Pueblo, which bears the name of Cagayancillo, about noon.

Upon a small peninsula jutting from the bay, and in a very commanding position, is situated the fort, and within it the church. It is a high walled parallellogram, *en barbet,* evidently of Spanish construction, and has several small brass guns or swivels, but not a serviceable carriage. The flagstaff bore what I suspect to be a tablecloth, certainly not the national colours of Spain; and as no troops were present, and the place was not under the control of any military character, some little doubt seems to exist as to whom it is subject. The Alcalde Mayor, as he styled himself, a jolly, good-natured character, who managed our purchases, and made himself very useful, acquainted me, that they were under the control of Antiqué, a town on the coast of Panay, nearly east from the group, and that the Padre from that place occasionally visited them. But subsequent information threw some doubt upon this statement, as neither Cagayan nor the name of the Padre could be found in the official Colonial List. However, the greater part of them understand Spanish, and as those belonging to the convents wrote it, as well as the name of their priest, it may be safely assumed, as they frequent the church, and acknowledge the Catholic religion, that they are not Moors (or Mahomedan), as some have suggested. Their dialect is Bisayan, similar to that in use on the coast of Panay. The principal part of the village, which is concealed, and conveniently shaded by a thick screen of Cocoa-nut, as well as garden trees of close foliage, runs in a line parallel to the coast in a single street, until reaching the sandy bay southerly of the fort, where it abuts and forms a fresh cluster, apparently, of fishermen's houses. It is at this spot that their wells are dug, on which it appears they are entirely dependent for water, and which being partially infiltrated from the sea is not particularly pure. The houses are constructed on posts, having the floor raised about six feet above the earth forming beneath the customary pigsty, poultry pen, and receptacle for the filth of the house, similar to most of the Bisayan villages. Cattle appeared to flourish, and several were procured at moderate prices (six to ten dollars) for the crew, as well as some tolerably large hogs. Poultry were also moderate, but vegetables scarce. Cocoa-nuts abound, and as the milk of this fruit, averaging three half-pints per nut, very much conduced to the health, as well as gratification, of our crew, a sufficient stock was procured.

The principal part of the active population was absent on their fishing excursion to the Island of Calusa, situated about fifteen miles to the westward. The natives of both sexes are a fine clean-limbed people, superior to the general race of Bisayans noticed elsewhere. This may possibly arise from the greater prevalence of fishing pursuits, which I have noticed in many parts of the world to produce a corresponding clearness of complexion and brightness of eye, almost constituting a superior breed.

The first instance in which I recollect to have noticed this, was at Cape Blanco in 1832, where we met the fishing vessels of the Canaries, and it was remarked generally that the people engaged in these were of a lighter, clearer complexion, and superior address; so much so, as to elicit the remark, "that they appeared gentlemen in disguise."

The same observation holds with regard to the natives of the Sandwich Islands and Tahiti, who are said to have degenerated since the introduction of religion, or rather the Tabu against bathing and fishing, formerly practised; and lastly, to come even to the Equatorial regions, we have the Bajows, or fishermen of Borneo, some shades whiter than their brethren of the interior. The use of fish may have its weight, but the fact of their possessing a purer skin and cleaner complexion remains. The race at Cagayan appears, however, to possess a greater mixture of Malay and Spanish than was observed at Luban, Ylin, or Samboanga. The interior of their habitations was more cleanly, and but very few instances were remarked of their using the Areka. I noticed, however, one or two plants of the sirih (or leaf in which it is enveloped, in order to form, with lime, the bujio) very carefully trained over a lattice work and guarded by a fencing, which shews that it is still considered as a luxury. I did not, however, notice any of the Areka Palm beyond the village gardens, and of these but few

The entire group presents the appearance of an upheaved mass, the composition of the greatest elevations, which are rugged and weather-worn, being entirely similar to the coral islands of the Pacific, and exhibiting complete forms of brain-stone madrepores, and other zoophytes. On this account they offer but little opportunity for cultivation, being entirely dependent, in some places, on the small portions of earth which have been filled into the cavities. On the great island immediately above the town, the soil is more abundant, the surface of the hill smooth and composed of a reddish earth, apparently decomposed vegetable matter. As it approaches the town, or base for the Cocoa-nut trees, the soil becomes darker, probably from greater attention to cultivation, and mixture of manure; but I remarked that wherever the soil had been disturbed to any depth, or where the land crabs had carried on their operations, that the sub-soil consisted entirely of comminuted coral matter. The island being, therefore, deficient in the composition of the older strata is not in a condition either to retain or convey its casual supplies of water to the lower levels, and for this reason, as well as from the coral debris noticed at the wells it cannot at any time be so pure as that of more primitive formations. After a very close examination of the northern entrance to the sound, formed by the greater islands, it was ascertained that it is barred by sandbanks, which would not admit of vessels drawing above twelve feet; a channel might, however, be easily dredged through this obstacle, although it would soon close again by the constant undulation prevailing within the reefs. At present it would afford a secure asylum to small vessels, drawing from ten to twelve feet, and in the event of war, would become a most important position for annoying the trade of these seas. The interior of the sound is deep, and its numerous picturesque bays afford eligible situations for forming jetties or other buildings for marine purposes. The scenery reminded me very much of some of the sequestered spots about Bermuda; the principal trees, however, differ here, they are mostly of the palm tribe, with the underwood composed of the *Hibiscus* and other shrubs prevalent in these regions; no hard wood trees were noticed.

From Cagayan we stood over to Calusa, and edged round its breaker line in the hope of meeting with anchorage, but as this search proved unsuccessful, we landed to determine its position. At first, I suspected the island to be thickly inhabited, but we soon discovered that they were only the fishing parties from Cagayan, who paid the island a visit in order to obtain a supply of Cocoa-nuts, with which it abounds. The entire island, occupying a space of about 1500 yards in circumference, is thickly studded with these trees, and the underwood so dense, as to render it a difficult matter to get out if once caught within its labyrinths. After purchasing some hundreds of this fruit, we returned to Cagayan, where we found some of the fair ones very much alarmed at the non-arrival of the boats containing their better halves, and which a strong adverse wind had forced to leeward. They were much pleased to hear of their safety, from us, and at about the period of our departure most of them were near their port. These vessels are about the usual build of prahus, of forty feet, sharp at each end, with a good midship section, but deficient in bearing at either extremity. Yet in these frail craft they make their voyages to the coast of Panay, laden with dried fish, and returning with cotton goods.

Quitting Cagayan, we steered for the coast of Mindanao, selecting our watering station on the western shore for our principal meridian. On the night of the 21st, we dropped anchor, and having obtained observations, moved on to our old position off the town of Samboanga, where I had an opportunity of renewing my acquaintance with the Governor, Colonel Figueroa.

On our last visit he had been compelled to quit at the moment that the naval authorities had interfered about our sounding operations. This was now satisfactorily explained, and, as I imagined, had been a mistake altogether, or rather, it had not been officially notified. As our duties did not confine us so closely as on our former visit, the Governor and his friends made up a party for an inland excursion, or pic-nic, which we enjoyed amazingly, obtaining from our elevated position a most commanding view of all the surrounding coast and islands up to Basilan. The position where we rested was the inland *Vigia* or Guard-house, established to keep in check the lawless mountaineers, who are equally dreaded with the Moros, of whom, indeed, they are the counterpart, on the soil, and connected by the Bay of Illana. But these mountaineers are less merciful than their brethren of the sea, generally spearing their victim, whom they cannot very conveniently carry away, and whom it would be impolitic to spare, lest he should tell tales. A pleasant rivulet winds through this region, having sufficient depth for bathing, in which many indulged after the fatigues of the chase. It was expected that deer and mountain cocks, the beautiful and graceful Malay bird, would have been added to the spoils, but monkeys and woodpeckers were, I believe, the only *game* produced; a pair of the cocks were noticed, but too wary to be killed.

This excursion proved to us that our judgment relative to the quantity of land under cultivation between the coast-line and the base of the mountains was much underrated. The width of the available land, extending about twenty miles along the coast, westerly, may be reckoned at three miles, and that used for pasturage on the cleared hills about the same distance, making a line of country twenty miles in length, and six in depth, as solely dependent on the town of Samboanga. Throughout this extent, streams of excellent water pervade, forming on an average about one for each mile. The land in the immediate vicinity of the town is laid out in gardens and fields, producing all the fruits and vegetables generally found in these regions. Stock of all kinds exists in abundance, but I am sorry to say that the scale of prices is very exorbitant, particularly for bullocks and vegetables. Washing is enormously expensive, and infamously executed, worse than that generally performed by seamen. As the colony is under *surveillance*, and one person alone authorized to deal with strangers, this cannot create surprise, but as this individual chose to give himself more airs than became him, and capriciously impeded our supplies of bullocks, I was compelled to turn him over to the mercy of the higher authorities, who would not countenance his insolence to military authority. This conduct caused a considerable reduction in his profits, and will, probably, produce a stricter look out upon his proceedings with future visitors.

Our operations in this region were more particularly directed to the completion of the shoals extending from the Santa Cruz islands, situated about two miles immediately to the southward of the town, and from which, westerly and southerly, a very extensive bank of coral projects, rendering the navigation of this channel dangerous to strangers, but more particularly on its southern side, or from a position due west from the western Santa

Cruz. Here the current sets at an angle obliquely southward, and in light winds no commander should hesitate in dropping his anchor in fifteen fathoms, until the tide changes, and by heaving in his slack cable at change of tide, there is no fear of losing his anchor. Vessels which unfortunately ground here have no mercy shown them at Samboanga, as may be seen, page 706, 'Nautical Magazine', 1843; the purport of which is as follows:—"The 'Ann' of Greenock, with a valuable cargo, consisting of tea, silk, and sundries, from Canton to England, under British colours, struck on the Santa Cruz bank at 8, P.M. on the 14th June, 1842. She was relieved by the exertions of the masters of the 'Cyrus' and 'Marshall Bennett' whalers, and brought to Samboanga. Offers were at first made by the Spanish authorities to assist her, but so exorbitant that they were inadmissible, and subsequently, entirely refused. Finally, they were deemed so very doubtful to the security of the cargo, if landed, that it was considered more advisable to proceed to Sourabaya, on the eastern limit of Java, where she was convoyed by the 'Cyrus', making about twelve inches water per hour;" and then the writer of the article goes on to contrast this treatment with the conduct of the people of Loo-Choo towards the crew of the 'Indian Oak' stranded upon those islands.

The only remark which I shall offer upon this matter is to the effect that a more upright, honourable Officer than Colonel Figueroa is not to be found, and he bears that character at Manila amongst the European residents. In these matters I fear he has no control, and that the officially the day following, accompanied by the Civil

Spanish Government is not at all maintained at Samboanga owing to the conflicting interests or independent jurisdiction which is claimed by the marine department. I do not mean to give any opinion as to the matter of the 'Ann', because I did not know of it at that period; but as several occurrences, in reference to the 'Samarang', of trifling importance viewed separately, came under my observation, I became an involuntary witness of these military disagreements, which, for the credit of their Flag, should have been concealed from me. Of this feeling I had some knowledge before quitting Manila, but it will scarcely be credited by any of the superior authorities who may chance to scan these pages, that neither the Captain of the Port, nor any naval person whatever, visited the 'Samarang' on anchoring in their own roadstead. I had always been under the impression that the Spanish Colonial laws, and particularly at such a settlement as Samboanga, forbad communication with the shore from any foreign vessel before "*the visit*;" but the general courtesy of the Spanish nation warranted the expectation of the customary civility towards a ship of war belonging to a nation in amity with Spain.

It was not my business to dictate what their law should be, and as it was possible that the Naval Commandant of Gun Boats might be absent with his flotilla, I lost no time in paying proper respect to the Military Governor, by sending an Officer to wait upon him and ascertain whether he was present. Upon the return of this Officer, with a very warm invitation and offer of apartments, I waited upon him. He returned the visit

Magistrate and suite, but no Naval Officer performed such a courtesy during our stay. This conduct appeared the more unaccountable as it was well known that on this occasion I was the bearer of a special note from the Governor General, the friend of the present, as well as late Brigadier of Marine, of the Captain of the frigate, and of Captain Villavicentio, formerly the Commandant of the flotilla here. It may appear that I am overrating the importance to be attached to these party differences, but my present object is to point out the possibility of some such feeling being either the direct or latent cause of the treatment complained of by the 'Ann', and it is highly probable that it resulted from conflicting opinions as to jurisdiction, whether it was within the province of the Governor or Naval Commandant.

It may be assumed that in this penal settlement the Spanish Government does not countenance the visits of strange vessels. Grant it in the case of casual visitors, but the laws of humanity and custom of the civilized world extends assistance to vessels of every denomination in distress, and no excuse can be accepted for its denial to the 'Ann', particularly if, as stated, they originally consented to it, and exhibited the means they had of meeting every exigence, if only the money was forthcoming. As to the refusal of men to navigate the vessel to Java, the writer of the article in the Nautical Magazine, forgets his admission that he was in a penal settlement. No doubt much may be disputed on this matter, but I must candidly say that from Colonel Figueroa I received the most marked courtesy, and special exertion on his part to carry out every wish connected with my duties, and as to my private convenience, I found him truly a friend.

On our former visit to this place we had made a shooting excursion into the interior from Calderas until we reached a collection of huts situated upon the banks of a stream. This was termed the village of Dumalon; but the river having forced a new and more direct channel seaward, and the interior position having been found unhealthy, a new stockaded village, under the same name, presented itself at the new *embouchure,* on the coast-line, a little to the southward of our favourite watering position. The stockading, look-out houses, perched on tall spars about fifty feet above the earth, and other war-like defences, showed that they were not disposed to trust too implicitly to the friendly alliance existing between their neighbours of Mindãnao, or Illana.

The population of Samboanga and its vicinity is composed of the families of the military forming the garrison; of the Gun-boat flotilla; and probably of those whose term of durance having expired, and having contracted ties with the residents, prefer remaining under steady military employ, to return to Manila, where their means of livelihood might be more precarious. To this cause we may probably assign the prevalence of a fairer and better looking race of females than are generally observed in such small societies, being the progeny of those permitted to accompany individuals with sufficient means to support them independent of labour. Some few instances are related of a peculiar heroism amongst some of these characters, which shows that they are, in cases of danger, less effeminate and vigorous in resources than their male companions, at the same time that their enemies, the Illañons, are not wanting, almost to the extent of Spanish courtesy, towards the fair sex when found in a defenceless state. During our stay here, Mr. Adams was furnished with a very intelligent guide belonging to the establishment, and penetrated some distance into the interior for the purpose of collecting objects of Natural History, but his conductor appeared to be very sensitive upon the subject of "*Los Indios*" or mountain Illañons, whom he stated to be constantly in ambush, on the look out for the cattle or persons of the Spaniards. This same person, however, accompanied me to an eminence much further inland, commanding a most extensive view of all the adjacent islands, but as we were well armed he exhibited a great show of valour, rather wishing for their appearance, probably with a view to retaliation. Our collection was not, much enriched from these excursions; the streams, however, afforded great variety of fresh-water shells, and some peculiar fish; a few land shells were also brought in by those sent to seek for them on the mountains. The sea did not afford anything new, although the locality warranted great expectations; as boats in penal settlements are dangerous means for escape, they are, of course, prohibited, and to the absence of the pursuit of fishing, we may attribute the scarcity of shells, except of the common Cowries, which abound on all tropical shores.

Having expressed some anxiety about procuring a spar fit to replace the foremast of the 'Royalist', the Governor advised my visiting the new Port of Pasañhan on the northern side of Basilan, in sight from the hills above

Samboanga; and in order still further to forward my object, he most kindly wrote a note to the Commandant, requesting his co-operation, and expressing a wish that the Officer commanding the Gun-boat would afford his aid by lending one of his crew to guide our carpenters to the most convenient spot, as well as to point out the names and qualities of the different woods adapted for spars. On the 2nd we took leave of the worthy Governor and his civil establishment, and steered a course to skirt the extremity of the shoals extending westerly from the Santa Cruz islands. The day was beautiful, and with a light breeze we passed in depths varying from five to fifteen fathoms over the coral outlines, seeing the bottom too distinctly for enjoyment had we not been already certain, by previous investigation, that no actual danger existed.

The result of our Observations at Samboanga on these two visits, places the western extremity of the town (at the watering-place) in Lat. 6° 54′ 55″ N. Long. 122° 2′ 12″ E. Var. 1° 19′ 41″ E Dip. 1° 20′. As the Term Day for this month occurred during our visit, the Magnetic Observations were conducted at the same spot; but the Vigia, or high look-out-house, which formerly marked the observing position, has been removed.

CHAPTER XIII.

ISLANDS OF THE MINDORO AND SOOLOO SEAS.

Island of Malavi—Mode of felling trees— Visit to the Comandante—Fort of Pasanhan— Wood of Malavi—Course directed across the Mindoro and Sooloo Seas—Island of Kulassien—Cagayan Sooloo—Chase after two piratical-looking prahus—Dangerous navigation—Banguey—Geological structure—Balambangan—Harbours and general resources—Tanjong Agal-Agal—Useful properties of its sea-weed—Dalrymple's account of Maludu and Kini Balu—The Black Peninsular—Encampment of Illanon pirates—Ant Islands—Description of the Sumpitan and arrows—Tampassook river—Abai and Ambong—Visit from the Sultan of Tampassook—Return of the 'Royalist' with supplies—Height of Kini Balu—Rivers Sulamàn and Kawalan—Friendly disposition of the natives Gaya Group—The rivers Kabatuan and Inanam—Interview with the natives—The Kinyanis river — Alarm the natives — Idaan Tribes—Membakut, Kuala-lama and Kuala-panco rivers—Bird Island.

On the morning of the 3rd we found ourselves off the western end of the Island of Malavi, which forms, by the canal within it, the Port of Pansañhan, a new settlement by the Spaniards on Basilan, resulting from the late attempt of the French to obtain possession of Malozo on the western side of this island, which the Spaniards assert to be within their territory. As no signs of national colours were noticed, and no boats came off to instruct us, we dropped our anchor in a very convenient position at the western entrance, and erected our Observatory at the nearest end of the island of Malavi. Although armed with the permission of all the superior authorities to pursue our operations, still courtesy required that the Comandante should be visited and the necessary arrangements made with him. Leaving affairs, therefore, in train for an active survey of the port, I repaired to the Fort to seek the Comandante. At the landing-place I found two gun-boats moored, but no officers visible; passing them, I landed and moved on towards the summit of a conical rise under process of clearing, experiencing great difficulty in threading my course through fallen trees, which were in some instances separated by fire, but under which I had at times to stoop. The labour of felling these huge trees by the axe would have proved rather a serious task, the natives therefore collected the smallest, and by forming stacks of these, split into small pieces, round the bases of the largest, effected their object by undermining them by fire. The crash of the trees on falling was startling, and the report was heard for many miles. Their labour did not, however, cease here, for fresh fires had to be continued to exterminate these obstacles which continued to form a smoking pile, and instead of conveying to the ordinary traveller the idea of visiting a new and rising possession, tended rather to impress upon him the idea of recent disaster.

Having at length waded through these highly perfumed difficulties, I reached the entrance to a strongly stockaded fort, within the lines of which the more substantial walls of stone and mortar were in the course of erection. At present, all was hut work, and in a very miserable kind of barn I was told that I might *find* the Comandante. This was all the military reception. After some delay and knocking, a subaltern presented himself, who was excessively civil, apologized for want of ceremony, and informed me that the Comandante was dangerously ill with fever; and from my observation of himself and another, emerging from a deal inclosure near us, added to the steam and oppressive feeling resulting from the effluvia of the surrounding burning ruins of the monarchs of the forest, I thought it highly probable that my present friends might soon be added to the hospital list.

Having produced the letter from Colonel Figueroa, and the Governor General, enjoining attention and assistance, the Commanding Officer instantly assured me of every assistance within his command, and in pursuance of the wish expressed in the Colonel's letter, despatched a soldier requesting the presence of the Officer of the Gun-boat. Upon his arrival he was informed of the message from the Governor, indeed, read the letter. The question of military jurisdiction was immediately raised, with the distinct assertion that he could not obey the order. The military Officer endeavoured to assure him that it was merely the *wish* expressed by Colonel Figueroa, but in vain. In order to be quickly relieved from the very unpleasant predicament in which I found myself placed by these unpleasant jarrings, and which began to wax very warm between the parties, I felt it my duty to stop further discussion by informing the naval man, "that I entirely declined any assistance from his department, or any further communication upon the subject, which I should refer to superior authority. I begged, however, to remind him, that as Great Britain invariably extended her *courtesy* to all foreign Flags visiting her ports, I thought that her ships of war were at least entitled to the ordinary courtesy of civilized nations, especially from one supposed to be in amity. Independent of this, I considered that the letter of the Governor General warranted me in *asking* for any assistance I might require in any part within his jurisdiction, without reference to the very simple request of the Governor of Samboanga."

The Officer attempted to explain his independent position, and tendered assistance on his *own* part, or to further my wishes in any way, but as these explanations involved discussions, which it was my duty to avoid, I resolutely declined further intercourse, obtaining from the military all the assistance which I required. As the state of the Comandante appeared to be so serious, as to require immediate assistance, I lost no time in returning to the ship and forwarding one of our medical staff.

The Fort of Pasañhan is situated about forty feet above the sea level, and by clearing away the trees intervening, commands the two entrances on the east and west of the Island of Malavi. The interior accommodation within the fort is intended to provide for a garrison of sixty, and as the natives continue to be troublesome, cutting off any who may stray beyond the picquets, it is probable that the houses exterior to the fort will not begin to accumulate until great progress has been made in clearing the thick woods which still hang upon its rear. Fresh water is scarce, but this important treasure was discovered not very distant, by one of the Officers of the garrison during our sojourn, and so delighted him that he must needs force me into the compliment of drinking a tumbler with him, as if it had been first-rate wine. The crown of the hill, and to musket shot in the rear, as well as down to the canal at the sea, easterly, is already felled, burning, and in process of clearing from rock, which is readily split by water when heated by the burning trees, and is in great demand for the construction of the fort. Near the water the ground is still very swampy, but this will shortly be filled in, and in all probability form the jetties to the new town, which, if judiciously managed, may be rendered one of the most valuable ports in these seas. For a long period Basilan has supplied Mindanao with fruit, vegetables, cattle, poultry, &c., and if the native population, which are Mahomedan, are once brought to friendly terms, Pasañhan must become the principal resort of the whalers frequenting these seas; but it should be freed from the disabilities under which penal settlements labour, and be under a separate Government, favouring commerce, and totally disconnected with Samboanga. The western harbour is open to the sea, having a long bay terminated by the Island of Lapinigan, at a distance of three miles westerly, but still affords excellent anchorage over a tough clay bottom, with shelter from prevailing winds. A small island, nearly mid-channel, protects the inner anchorage, which is completely land-locked, and between this island and Malavi is a deep pool with space to shelter a ship of the Line in depths from five to fifteen fathoms, most admirably adapted for careening or repairs. From the space fronting the town, easterly, the channel affords a long range for shelter, taking the precaution to avoid two coral patches, which are nearly mid-channel. There are, therefore, two passages of entrance or exit, but that easterly can only be used for towing, or by steamers, as it is too narrow to work in. As the Fort of Pasañhan is commanded by heights inland, and the general features of the neighbouring land exhibit strong water courses, there cannot be the slightest doubt but some of the mountain streams will soon be conducted to the town, and complete the only important resource now looked for.

The Island of Malavi furnishes the hard wood of that name, of a yellowish tint, adapted for gun carriages; *Poon* for planks or spars, and the *Palo-Maria,* said to be particularly suitable for lower masts. For this use I should not select it where I could obtain sound fir, or even Poon, being equally dense as oak. Many other woods abound, and in Basilan may be obtained to any dimensions within the bounds of reason, as I myself observed a noble denizen of the expiring forest, exceeding nine feet in diameter at the base, and above one hundred and fifty feet in length, of available timber.

Our boats were despatched under the command of Lieut. Roberton in search of fresh water, which he found in the first large bay west of the settlement, but the tide falling, prevented his egress with the full casks. Having completed operations here, we quitted on the 6th, passing the Spanish frigate 'Ysabel', and gun-boats returning from their expedition to Sooloo. Off the western point of the bay we noticed a large prahu making towards us, which induced me to wait. It contained several large and fat bullocks, but their prices were so exorbitant that

I declined to have any dealings. The owners had probably calculated upon a higher price meeting us under canvas, and being Malays, were too proud to lower their first demand.

The position of the entrance point on the western extremity of Malavi is situated in Lat. 6° 42′ 22″ N. Long. 121° 52′ 23″ E. No currents of force, similar to those of the Straits off the Santa Cruz islands, are encountered near Pasañhan or Malavi, although a strong tide sets through the narrow eastern channel. Vessels, therefore, are not subject to similar inconveniences on approaching or quitting this port.

Our course was now directed to cross the Sooloo and Mindoro seas for Banguey, situated off the northern extreme of Borneo, but touching at such islands as calms or variables might render it advisable. The first object encountered in our way happened to be the Island of Kulassien, which we reached on the evening of the 7th, and landed to determine its position by the stars. Nothing worthy of interest occurred, and having fixed its southwestern extremity to be in Lat. 6° 25′ 4″ N. Long. 120° 34′ 52″ E. Dip. —0° 42′, we resumed our voyage. The reefs off this island appeared to stretch far to the southwest, and are not so apparent to the eye as such dangers usually are. A village, with numerous small prahus, probably devoted to the Pearl and *Béche-de-mer* fishery, was noticed on the island west of it.

On the 9th we sighted Cagayan Sooloo, a detached island, apparently owned by none of the present reigning powers, but classed among the dependencies, or Sovereignty, of Sooloo. The principal object of our visit being merely to determine its geographical position, no attempt was made at any survey beyond the immediate anchorage. Our observatory was pitched upon a small rocky islet, perched upon a reef at the entrance of a most romantic circular basin, and although perfectly barred by a reef crossing its entrance, was bottomless, with fifty fathoms immediately within, and having but fifteen fathoms at a boat's length from any part of its sides, above which the cliffs rose abruptly to several hundred feet. It appeared, indeed, as a complete crater, and though densely covered on its sides with the most luxuriant vegetation, composed chiefly of parasitic plants, the absence of a ripple or breeze, the deep blue mirror reflecting and adding to the apparent cylinder, together with the silence and gloom which prevailed, was almost oppressive; a chasm in the rock showed that one of a similar character was situated almost in conjunction, easterly, but we noticed, on passing in the ship, that it was similarly barred by reefs. To the westward, habitations were noticed, but as no disposition was exhibited on the part of the inhabitants to visit us, and our time was fully occupied in more important pursuits, they were allowed to remain undisturbed until we were at liberty. The motions of several prahus, noticed off two small islands, situated about three miles to the southward, being suspicious, began to excite our attention about 3 P.M., nearly at the moment, having completed Observations, I had dedetermined on visiting the houses above-noticed; but our plans were now changed, and, under the full belief that the prahus were piratical, the signal was made for a general chase, our boats being at that period about five miles to the westward, fully armed, (for measuring base by sound) and in a condition to prevent their escape. The 'Samarang', by signal, was under weigh, and all on board eager for the fray before I reached her; and a very animated chase occupied us until near sunset, when the ship, having brought two prahus under her guns, and between her and the southern island, a shot beyond them intimated the futility of any further attempt at escape, as well as the propriety of awaiting search, which the two cutters, rounding the western side of the island nearly at the same moment, carried into effect. They contained a Malay Chief, and a larger supply of arms, people, &c., than any peaceable persons could be supposed to require; as to the fact of their following piratical courses I had not the remotest doubt, but as they did not contain captured Christians, nor could any piratical *fact* be alleged against them, they were suffered to pursue their course, which appeared to lead them to the main island of Cagayan Sooloo; the 'Samarang' continuing hers towards Banguey. The Islands of Cagayan, as far as noticed by us, comprise one large, very high, well-clothed with trees, and apparently of volcanic origin, with two smaller islands, situated about five miles, nearly south of the centre of the main one. Reefs appear to extend some distance, belting the greater island, but the smaller appear to be "steep to", and are moderately elevated hillocks well clothed with timber.

The position of our Observing islet, nearly upon the meridian of the centre of the great island, was determined to be in Lat. 6° 58′ 5″ N. Long. 118° 24′ 11″ E. Var. 0° 12′ 29″ E. Dip. — 0° 55′ 50″ Anchorage was obtained for the 'Samarang' in sixteen fathoms, about one mile south of our Observing station, but from our elevated position on the rocky islet, the reefs, off which our cutters were anchored, appeared to extend fully that distance from the western shore, and exhibited several rocks, dry at low water.

At daylight on the 11th of March, we sighted the lofty peak of the Island of Banguey, and trusting to the Charts, shaped our course to enter the channel by the southern side of the Mangsi Islands; shoal water was reported seen from the mast head, but before the requisite information to enable us to clear it was given, the rumbling of broken coral under our keel informed us that we had been trespassing, but as it did not impede our motion, we were soon on the alert to escape similar patches. This, however, appeared no easy task, as on tacking and standing to the eastward, similar dangers appeared to intimate that we were *entrapped.* As the channel within appeared to be sufficiently wide for working, we made the best of our dilemma, and by dint of close watching from the mast head and bowsprit end, gained a fair channel about 4, P.M., not, however, without occasional nervous moments, and going through patches barely kissing our keel, but as these are affairs of frequent occurrence to vessels engaged in exploring new channels, they did not excite us beyond the first discovery of our being entrapped. The S.W. angle of Balambangan had been the rendezvous appointed for the 'Royalist', and to that point our course was now directed.

The shores of Banguey, with its imposing and very picturesque peak, engaged our attention more than the monotonous appearance of our territory of Balambangan, upon which, indeed, one or two hillocks appeared to assert that it was not entirely a Mangrove swamp. As we passed the bar, connecting the small islet off Balambangan with Banguey, we had as little as four fathoms, but as this was nearly the same as given by Dalrymple's chart, it was unnoticed beyond hauling a little more towards Balambangan. The sun had failed, and as we neared the spot on which we intended to anchor, I felt, perhaps, more nervous than I otherwise should, from circumstances arising from a Court Martial on the Master of the 'Vestal', for unfortunately touching one of its shoals, and this investigation having thrown doubts upon the accuracy of the charts, it behoved us to be more cautious. The good fortune, usually attending us, led us in the dark into the very position which I should have selected by bright day, although not more than sixty yards from the rocks when daylight discovered them to us.

In order to establish a good look-out position from which the 'Royalist' might be seen, as well as a conspicuous feature for our principal station and astronomical position, the summit of one of the southern peninsulas was cleared of trees and levelled for the tent; this enabled us to command the entire sea view westerly, as well as the whole channel between Balambangan and Banguey. The customary duties of the survey engaged our attention generally. The two great bays of Balambangan had been examined partly by Dalrymple, but the coast of Banguey was completely a *terra incognita,* and in the event of resuming our claims on the Island of Balambangan, it would become important that we should ascertain how far Banguey, in case of need, could assist in supplies, more especially of water, for our shipping. Horsburgh states that the boats of some vessel visited a river on the western side of Banguey and obtained fresh water. Two apertures, supposed to be rivers, were examined by us, but both were salt, apparently estuaries, possibly sending forth fresh water in wet seasons, but this year being considered remarkable for the general failure of the rivers on the north coast of Borneo, may account for our want of success. But, independent of the question as to fresh or salt, neither of these estuaries could be conveniently made use of, owing to the shoals which prevent any large boats from approaching, except at the period of high water. On our first arrival, the natives were seen quitting the western shore of the island in five prahus, and rounding its southern extreme, shaping their course easterly, subsequently, when working along that coast, I noticed eight or ten small prahus hauled up amongst the trees, two, in particular, very neatly painted, but no inhabitants were noticed either on the beaches, hills, in canoes, nor any huts, during the entire period of our detention in this neighbourhood. The soil of the island appears to be good, and the trees and shrubs of luxuriant growth; the rocks noticed upon the coast-line were slate; conglomerate, the pebbles being quartz or jasper; and jasper; one very tall pyramidal rock, rising to the height of eighty feet, entirely of contorted laminæ of red and yellow jasper; the soil, overlying the slaty portions, was generally of a yellowish steatitic clay, very friable, and evidently not adapted to promote vegetation. The entire coast-line of the island, from its northern point, by the coast, to the southern extreme, is dangerous of approach, excepting the extreme western tongue, where it is nearest to Balambangan, and which I at first suspected to run out in a coral ledge forming the bar of the channel. This is not the case, as it is composed entirely of five slaty pebbles with gravelly bottom, rather "steep to," and carries five fathoms along its curvature; the coral commencing again about one mile south of it, and continuing its sweep from the mouth of the first apparent river or opening, encircles all the islands southerly, the water shoaling suddenly from eighteen to three fathoms. The western side, therefore, of this island does not appear to offer any resources to Balambangan, nor can any be hoped for from the north-western face. As far as we examined southerly, and easterly, the coast-line did not present any inviting bays or anchorages, but the creeks or estuaries on the S.E. face appeared, from the double range of hills, to run very deep into the interior, and as it was in this direction that the five prahus, seen upon our arrival, appeared to be going, it is probable that their villages lie in that direction.

Balambangan offers two excellent harbours, but both require some skill and previous knowledge of the ground to enter, and having effected this, security from strong winds, wood and water, will be the only objects to be attained. All this may be had without incurring the risk of the intricate navigation, by anchoring outside; and as strong breezes do not prevail, the outer anchorages are sufficiently safe. Of the two, the northern harbour is less difficult, and with a morning sun all the coral patches may easily be seen and avoided. The best anchorage is northerly of where the water flows into the bay; it is about five hundred yards within the southern horn, on the east of the position where the English fort stood, the site of which may be readily found by the bricks strewed about the ground, and the cleared and solid ground which is not to be found upon any other part of the island. A merchant vessel may obtain a supply, but the quantity required for the 'Samarang' very soon drained it; I think about fifteen tons. This, therefore, cannot deserve the appellation of a watering-place. As the water regained its level during the night, it is probable that it is derived from the rising ground behind the fort, and would prove sufficient for the consumption of its former garrison, which appears to have been about eighty persons. The narrative, extracted from the Spanish, and which appears in another part of this work, states that the party which surprised this position landed at the back of the island. This is improbable, almost impossible; but, as the Fort was situated on a peninsula, it is more likely that they landed on the southern side, and attacked the post from the hill in its rear, which, by the common rules of defence, should have been cleared and fortified, and would thus have prevented any chance of surprise.

Although the present season was deemed dry to an extraordinary degree, throughout the northern districts of Borneo, still the northern, and, apparently, swampy part of Balambangan, exterior to this bay, was found to contain large pools of deeply-tinted *fresh* water, and, in several instances, runs of sufficient strength to cut small channels through the sand into the sea. All the soil of this particular region appeared to be of a peaty nature, and the trees, generally, of good growth, being Poon, Casuarina, &c., but with little mixture of Mangrove. The southern harbour, although almost land-locked, or completely sheltered by overlapping reefs, has nothing to recommend it. The rocks, which are coralline limestone, succeeded southerly by a species of white marble and sandstone, and finally, by dark basalt on the off lying islets, are either fretted by sea, or atmosphere, into such sharp edges or holes, and in other spots in loose disintegrated piles, apparently from some great convulsion of nature, that standing room can hardly be found. This, therefore, forbids any use of the interior harbour beyond the simple shelter for refit; but a small space on the south side of the exterior bay, appears to have been cleared sufficiently large for the erection of a house, and at this spot a brisk rivulet of excellent water discharges itself into the sea. Unfortunately, however, the coral reefs at this spot prevent boats approaching nearer than fifty yards, except at high-water or half tide; and as this coral ledge is the base of a long coral tongue, extending northerly, and forming the southern overlapping tongue of this harbour, the adjoining land, exterior to the bay, and which is good soil, is still further unavailable for building. Viewing Balambangan, therefore, as a position for a settlement, it does not appear to offer one single inducement. The population of Banguey is stated by the people on the Borneo coast to be composed entirely of the Bajows or Sea Gipsies, and Idaan, which are periodically visited by the Malay authorities of Maludu Bay, for the purpose of receiving their tribute of Bird's nest, Tripang (*Béche-de-Mer*), Pearl, and Pearl Shells. The natives of Banguey have no commerce; the only chance of trade would be with Maludu Bay, and this is already so completely forestalled, either by the Bugis traders from Celebes, or the Arab Seriffs from Borneo Proper, that there is not the slightest probability of their bringing the produce of their villages in the interior, to seek a British market at Balambangan.

This is not a mere speculative opinion. I have looked very closely into the general habits and transactions of the accessible tribes, and their sources of trade in Borneo, Sooloo, and Singapore, and I have it from personal observation, as well as the best European authority, that no commerce can be carried on in these regions without the intervention of the Arab or Malay, unless the European agent visits or resides, and personally transacts the business, on the spot. I have before alluded to Mr. Wyndham, resident at Sooloo; from many conversations with that gentleman, who is an individual coming strictly within my meaning, I have reason to know that no profitable trade can be pursued where the intervention of a Malay occurs. I was thoroughly acquainted with the value of the goods lent by him on credit, as well as the returns for them, and in the offers made to me by the Sultan of Gunung Taboor, begging me to induce English merchants "to reside at Gunung Taboor, and trade," I ascertained, that he was a loser of nearly three hundred per cent. by trusting to his agent, Si Dawut. I had occasion, also, to deal with the Bugis traders, who endeavoured to monopolize the whole trade of Borneo; and I found, by reference to their transactions with the Sultan of Balungan, as well as at Gunung Taboor, that their profits were enormous, charging for the quantity of rice, valued at about one dollar at Sooloo, about *forty dollars* here. With regard to handkerchiefs, valued at two dollars, Sooloo, we could not make a comparison, as those from Celebes passed through Dutch channels; but the intrinsic value at which the Sultan reckoned them was ten dollars each, being five hundred per cent. on the Manila prices, and if exchanged for Bird's nests, sometimes reaching the value of twenty.

These remarks are intended to apply chiefly to the supposed sources of trade arising from Maludu Bay with Balambangan. Of the value of this trade I am informed that nothing but Camphor-Barus, Seed-Pearls, Shells, Tripang, and a small quantity of Tortoise Shell, may be expected from this source; and this not offering sufficient profit to an Arab merchant to repeat the venture at the risk of his property, as well as life. We may safely inquire then, would an English trader, differing so totally in religion, enter these haunts of what are designated, at the present day, "pirate dens", to seek for goods where one of their own tribe is scarcely safe? It is only necessary to turn our attention to the river Kotai. Have the Dutch, or English, after repeated attempts for a series of years, succeeded in opening trade, by the intervention of Europeans, with the Ruling Powers in that river? It is monopolized by the Bugis traders of Celebes, and so great is their influence there, that it is supposed to be their object to exclude even their own allies, the Dutch. This feeling prevails throughout Borneo, but at Gunung Taboor, as well as at Balungan, the Sultans have been taught to what extent they suffer, by allowing themselves to be imposed upon by these wandering merchants. They have now ascertained that the goods previously imported are very far inferior in quality to those of British manufacture, and that the prices charged by the Bugis traders are about eight hundred per cent. above a fair return, or considerably greater than if they opened a direct trade with Singapore in their own vessels, an event which will certainly follow the suppression of piracy on the shores of Borneo.

These observations apply particularly to the rivers in the Curan district, where the produce of the native tribes of the interior would arrive at a free market, uncontrolled by the customary tyranny of the Malay Rulers. But there is another trading position on the N.E. angle of Borneo, where the merchant is saved the trouble, as well as risk, of seeking an inland market. This is within the Island of Tambisan, or, in the harbour formed by the canal which separates it from Unsang. It is supposed that this is the head quarters, or general rendezvous, of the pirates of the neighbouring seas, and that all the lawless traders assemble here to exchange property. Here the Bugis, as well as the contraband Singapore traders, furnish the necessary supplies, of arms and ammunition, to those vessels which dare not enter a port under European jurisdiction. The property in the market, although in many cases drawn from the resources of that part of Borneo, may be considered as resulting either from piracy or oppressive taxes levied upon the people of these islands; amongst the most prominent objects at these sales, I am informed that slaves, captured by the Illaños on the coasts of the Bisayas, are to be found, and from this point westerly, as well as southerly, they are distributed along the coast. There is also another port, Tooncoo, on the southern side of Unsang, where a considerable slave market is held, but this is considered so completely a pirate den, that no traders venture there.

When piracy ceases upon these coasts, and Labuan offers similar advantages for trading, as Singapore, Tambisan may become an important intermediate position, as the southern rivers would find there a mart for their goods without the risk and tediousness of the Singapore voyage.

The establishment of a British post or colony on any part of the northern shores of Borneo, will not, I suspect, induce any of the native Authorities to *send* their produce thither for sale. At Maludu Bay, in particular, the destruction of Seriff Housman has deprived the people of that region, of the only energetic ruler who could have afforded protection to European traders. The natural feeling of enmity towards the nation which has punished them so severely, is likely to continue for some time, and Bugis and Malay influence will, for a long period, prevent our countrymen from any intercourse with the interior of this region. With regard to Balabac, and the islands northward, towards Manila, they are but thinly inhabited, by a similar race to those of Banguey, and are so averse to communication with foreigners, that they could only be dealt with through the objectionable intervention of Malay or Bugis agents.

The produce of this trade would be chiefly confined to the fishery, including *Baat*, or *Béche de Mer*, Pearl Oyster Shells, Pearls, Agal Agal, and possibly the *blachong*, which is composed of the minute fry of fish and shrimps, immersed in a saline pickle until symptoms of putrescense appear, when they are pounded together with salt, into a paste something similar to Anchovy. This is much esteemed by the Malays; when made more to the European palate, omitting the semi-putrescent stage, as practised at Malacca, it becomes a very palatable, and a favourite article at the breakfast table, eaten either with bread, or as sauce with fish.

On the 19th of March, the 'Royalist' rejoined from Singapore, bringing provisions, letters, &c. She had called in at Sarãwak, but as Mr. Brooke was in expectation of a visit from the 'Iris', and his neighbours were in rather a suspicious state, he was unable to join us. Our survey of the Balambangan neighbourhood being complete, preparations were made for carrying on the examination of the northern coast of Borneo. The principal station on the peninsular tongue off the southern harbour of Balambangan, was determined to be in Lat. 7° 12′ 51″ N. Long. 116° 49′ 8″ E. Var. 0° 37′ 20″ E. Dip. —1° 16′.

As the shores of Borneo, between Balambangan and our new territory of Labuan, have not hitherto been closely examined or described, and it is highly probable that naval operations, as well as mercantile speculations, will carry some of our countrymen to the mouths of some of the principal rivers, contained between these limits, I trust that the minuteness which I shall now feel obliged to pursue may not prove monotonous.

Our first position was taken up on the Island of Kalampunian, situated immediately off Tanjong Sampanmangio, the eastern horn of the great bay of Maludu Bay, and situated in Lat. 7° 4′ 17″ N. Long. 116° 40′ 30″ E. Although this island appears to be connected with the main land of Borneo, there is a fair and safe channel between it, having eight and nine fathoms, and sufficiently bold, on either side, for a vessel to pass, without risk by daylight, if, in chase, scant wind or any *important* service should render it expedient. After passing to the eastward, the ground, southerly, for ten miles, is unsafe at two miles from the shore, by reason of many treacherous patches rising suddenly from ten fathoms, and having as little as two fathoms over them. As the great bay of Maludu was left for future examination, our researches did not carry us further into these intracacies. The coast from Tanjong Sampanmangio, southerly, runs into deep sandy bays, but unsafe for anchorage. Immediately within the western cape fresh water will be found at the eastern extremity of the first long sandy bay. Here we noticed numerous foot marks of the Water Buffalo, and during our examination for the spring, several fine deer, apparently of the Fallow species, invited our notice, but although half-a-dozen muskets were discharged at them, within a distance of thirty yards, none fell to our share. Pigs also were numerous. A party landed early the following morning in the hopes of shooting them, but met with no better success; unfortunately, I had deemed the report of their guns sufficient to disturb the whole coast, and, without being prepared, turned up a fine buck within a few yards.

The first point, south-westerly, from the Cape, distant about five miles, is a black rocky formation of basalt, and from its enclosing nodules of Zeolite, received the name of Zeolite Bluff. Immediately within it, easterly, a pretty strong stream discharges itself into the sea, but at low water leaves the sand bare for a considerable distance, seaward.

South-westerly of Zeolite Bluff will be seen the high rocks of Batomandé, connected with Tanjong Agal Agal by a low reef above water, but there are one or two channels through which boats may pass. It would be possible to carry a vessel through, but, except in cases of extremity, highly dangerous. Our station was taken up upon the inner rock, elevated above the sea forty feet. The outer rock is about ten feet higher, and accessible; its cavities swarm with a very light-coloured Bat. Two rivers are in sight from Batomandé, easterly. The nearest enters at a remarkable white Bluff within the coast-line, and navigable by boats at high water; it was not entered by our boats, the rollers rendering all the line between this station and Zeolite Bluff dangerous of approach. The second river is easterly, and enters at the termination of the tall Casuarinas, but is still more difficult of access.

About six miles to the S.E. of Batomandé a deep inlet occurs, into which two small streams appear to discharge themselves, which will admit boats or canoes at half-tide. This is probably one of the principal stations of the Bajows, or Sea Gipsies, whom we noticed retreating as we advanced. Like the Equimaux they had upon our approach rapidly packed up their houses, leaving the main stakes still standing, and from the remains of fish, in all stages, very little doubt could be entertained of their piscatory pursuits.

Tanjong Agal Agal derives its name from the Sea-weed of that name, which is collected in large quantity upon these reefs, extending nearly two miles towards Batomandé. There are several species of this *Fucus*, all soluble in water, forming a very nutritive mucilage, which when mixed with acid, fruit, or made into jellies (as I have noticed it at Seychelles and Mauritius) produces a very grateful beverage for invalids. It forms a considerable article of trade with the Chinese, particularly in the northern provinces of Chin-chew, where it is manufactured into a bright, substantial, transparent yellow jelly, and is sent in boxes, of about ten pounds each, to Canton. The gum, or paste, made from it, is supposed to possess the advantage of being unpalatable to insects or worms. It is from this gum that their fancy lanthorns are fabricated, by spreading it over gauze skeletons, it thus resembles, and is very frequently mistaken for, highly transparent horn. It is peculiarly brittle, even more so than glass, cracking under very slight changes of temperature.

Before taking leave of this part of Borneo the following remarks by Dalrymple, under the head of "the Sooloo Dominions in Borneo", may prove worthy the attention of those on whom may devolve the duty of pursuing further enquiries in this region. Speaking of Maludu (more correctly so written) he observes:—

"*Malloodoo* is, in many respects, one of the most valuable districts on Borneo. Few places equal it in the abundance of provisions, nor is it destitute of valuable articles of commerce. There are many rivers of fresh water, which fall into the Bay of *Malloodoo,* which is reported to have good soundings to the very bottom. On the east side there is a large shoal, which, by report, forms a fine harbour at *Bankoka,* where is a very fine landing-place, and very fine Coolit Lawang, or Clove Bank, is produced here.

"The opposite, or west side, is remarkable for the Pearl Banks, which are chiefly found near Songy Basar (Sungei besar or Great River).

"The whole district of *Malloodoo* abounds with Rattans, of which, ten or twenty feet long, two or three ship's load might be had; it also abounds in grain, and inland, is very populous. The country to the eastward of *Keeney Balloo* (Kini Balu) as far as *Sandakan,* is low and plain, with a few hillocks, but no high land, except a ridge to the southward of *Bankoka,* which seems to run nearly east and west towards *Paitan,* leaving a gap of of low land. At the bottom of *Malloodoo* Bay, between this ridge and that which runs from the *Tampassook* mountains towards *Sampanmangio*; through which, from *Banguey* and *Malloodoo* Bays, the high mountain of *Keeney Balloo* is seen to great advantage, rising abruptly on the west to a stupendous height, and falling down on the east with a gentle declivity towards the low land of *Sandakan.* This country cannot fail of being one of the most fruitful in the world if well cultivated, and inhabited by a civilized people; were this the case, there would be an easy land carriage, of forty or fifty miles to the Lake of *Keeney Balloo,* which is represented to exceed in magnitude the Lake of *Manila,* and to have many islands in it.

It is said to be five or six fathoms deep in some places, and to be the source of all the considerable rivers in Borneo, about a hundred in number; the water is not limpid, but whitish; around its margins are innumerable towns of Idaan. They have a Sovereign here, but in other places only Chiefs, or Orankys (orang kaya, head, or chief man). This tribe is exceedingly numerous, but from their want of foreign communication, and some remarkable customs, they are less addicted to commerce than the value of their country would make it imagined. They have, however, an intercourse with *Benjar*, and are well enough inclined to commerce and husbandry, except where their prejudices lead them into war."

These remarks appear to have been written about the year 1792, and are compiled upon the information given by *Bahatol*, a clever navigator, and native of Sooloo. There are many objectionable parts; more particularly those relating to the range of country between Kini Balu and Maludu Bay, which from the continuous range of mountainous land, as viewed from the sea, must throw great doubt upon this portion of the narrative. From the best information which we were able to obtain, the description of the Lake of Kini Balu, and the inhabitants of that region, is considered nearly fabulous. The eastern rivers of Borneo about the Curan region, result from lakes of their own, possibly a chain may extend towards Borneo Proper, but our intelligent friends at Gunung Taboor asserted that they were on the near side of a mountain five days journey from Bulungan. As I before remarked, these extracts are especially given for the sake of stimulating those who may have occasion to examine Borneo, in proving or disproving facts so very minutely detailed. Dalyrmple continues :—

"The Islands opposite to this part of Borneo, and, indeed, the coast from *Sampanmangio* to near *Paitan*, do not properly come under the denomination of the Sooloo dominions, as ceded to the English Company, and require a particular discussion in another place, as the most eligible of all situations for the capital of the *Oriental Polynesia*.

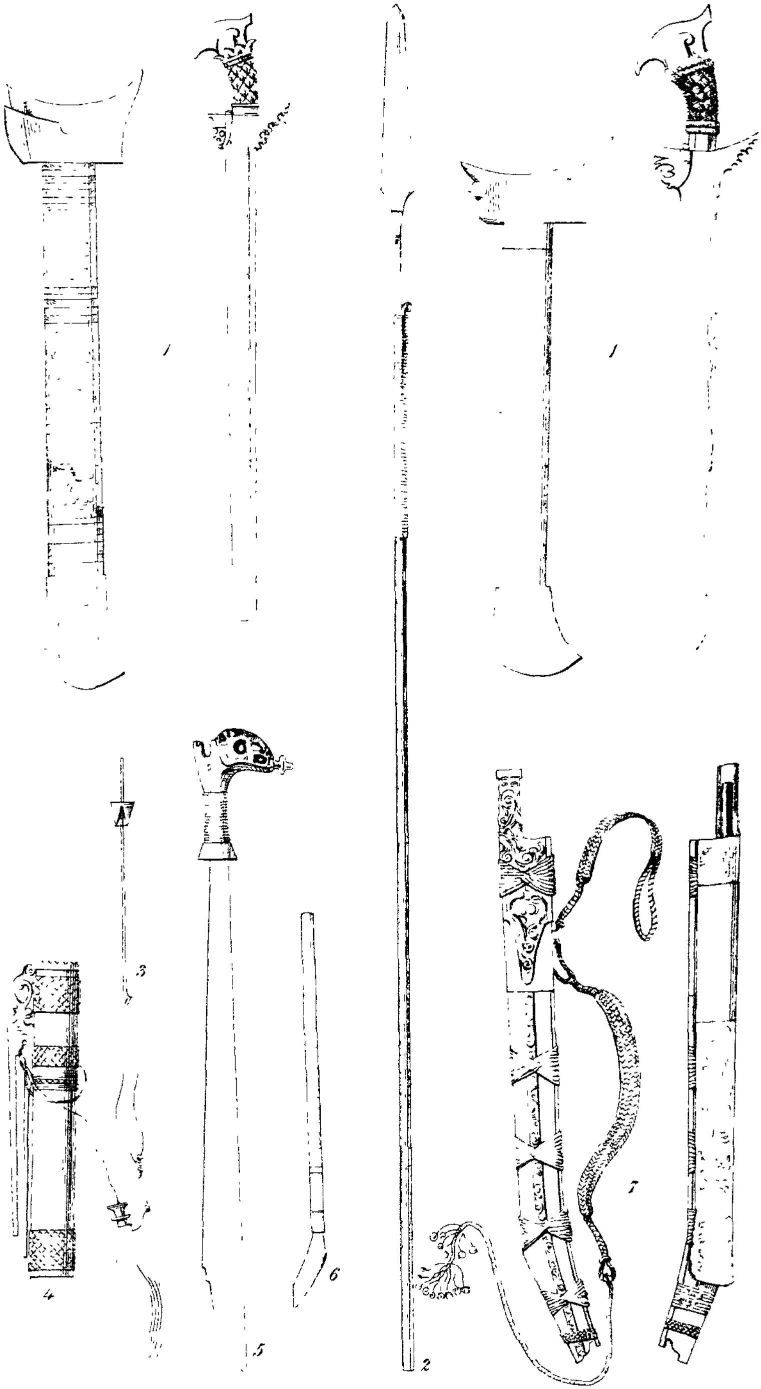
"The last district of Borneo is *Pappal*, the limits, *Sampanmangio* on the north, and *Keemannees* River, in 5½ North Latitude, which, by treaty, is the limit southward, with the Kingdom of Borneo Proper.

"The productions of this coast, in general, are Sago, Rice, Betel-nut, Cocoa-nut oil, Camphor, Wax, some Pepper, and Cinnamon; particularly the last, in some quantity, at *Keemannees*. The country is very populous, the inland particularly, which is inhabited by *Idaan*, as are some places on the coast. It is extremely well adapted for the cultivation of Pepper and Cinnamon, and in a very few years large quantities might be had; it is very well watered, and has the conveniency of many rivers navigable by boats, and some even by larger vessels; the river of *Tawarran* leads to the Lake of *Keeney Balloo* from whence it is about ten or twelve miles distant, and is accessible for boats; that of *Tampassook* is said to come from thence also."

Thus far I have followed Dalrymple's narrative, we now return to an actual examination of the coast-line; not being able, however, to communicate with the Malays or Bajows, who generally kept a march ahead of us, we were unable to obtain the names of any of the streams northward of Tampassook.

Quitting the Batomande rocks, which were determined to be in 6° 52′ 43″ N., our next position was a cluster of white rocks nearly on the chord of the arc, forming with a large black Peninsula, about ten miles from Batomande, a very extensive, but dangerous, bay. This bay contains three large streams, but difficult to enter except at high water. In the centre stream, off which I had taken my position upon a high conical white rock, I discovered an encampment which I suspected to be Malays, probably Illañons. This received the name of Pirate river. Their prahus were hauled within the trees, but as their crews came without fear to the beach, and made signs for us to land, it may be assumed they were not Bajows, who would certainly not have ventured so far from their hiding-places. The ship was anchored off these rocks for the night, and as the prahus had not quitted before we resumed operations in the morning, it became prudent to watch them. Our instructions, which most stringently forbad molesting any vessel not actually caught in piratical courses, prevented our interference, and they were suffered to pass our working boats without examination; but the well-known Illañon sword was noticed glittering amongst them, a weapon not at all indispensible in the hands of the *poor, wandering, peaceable* Bajows, as they term themselves.

Southerly from this Black Peninsula, the outer visible objects are small rocky islets, distant about seven miles; the entire space between them is not only dangerous of approach to shipping, but even to boats, being a continuous range of reefs, spitting out from the land, and not seen



1 *Kris, Brunai* — 4 *Sumpitan Quiver*
2 *Sumpitan Tube* — 5 *Sagai Parang*
3 *Poisoned Sumpitan Arrow* — 6 *Knife to do*
7. *Parang Scabbard.*

Reeve Benham & Reeve lith ad nat

distinctly until near low water. The islands received the name of Ant Islands. They are situated at the extremity of the long sandy bay, extending from Abai and Tampassook. A small river discharges itself into the sea at the termination of the sand; it is not, however, accessible until high water, and then at times unsafe, owing to the prevailing ground swell and rollers which set in upon this part of the coast. A long house, similar to those noticed at the Tampassook mouth, stands upon the sandy tongue, which I have little doubt is an Illañon haunt. During the period that I was engaged in examining this part of the coast, two horsemen made their appearance on the hill above us, and, had opportunity offered, would probably have treated us with a Sumpit arrow, as the weapons which they bore much resembled the Sumpitan, or tube from which it is discharged, and which they have the character of using freely to the eastward of Bruné.

The Sumpitan is a tube formed of hard wood, generally *Casuarina equisetifolia,* the bore being of one quarter of inch, and so truly executed that it is quite a matter of surprise how it is effected, nor have I been able to learn. The length varies from seven to eight feet, and one of its peculiarities in manufacture is, that it will only remain truly straight in one position. When this is determined, an iron sight is fixed on the upper, and a spear on the lower side. The arrows are generally nine inches in length, formed of the leaflet ribs of the Nibon Palm; sometimes of the outer wood of the tree itself. The sharp end is anointed with a deadly, gummy poison, in which the sap of the Upas is the principal ingredient. It dries hard and brittle, forming a kind of sheath, which remains fixed in the object which it pierces, whilst the arrow falls away. The inner end of the arrow is inserted through a small cone, formed of the pith of the Nibon, which is compressible, like cork; as the pith closes the aperture of the tube, and does not offer the resistance which a harder body would, it confines the air sufficiently to prevent any escape, until the arrow has run the length of the tube, and a sufficient impetus is thus acquired to project it with effect to the distance of 150 yards. The force is such as to enter a fir plank to the extent of an inch. The effect of the poisoned arrow, as described by the Malays, is to cause an instant numbness of the limb, depriving the victim of further, power, until death ensues. From the very great fear they entertain, even of the tube pointed at them, there may be some foundation for this assertion, but it is highly probable that in this, as in many other instances, the fatal result is in great measure hastened by fear.

The next direct line of coast is that from Ant Islands to the outer peak of the Island of Oosookan, within which distance great caution should be observed; although but two patches of rock *above water* are visible, I have strong suspicions, owing to the general range of small water, to suspect that others will hereafter be met with. I would therefore advise persons not having special pursuits in the bay, not to go into less than fourteen fathoms. Midway between these points is the river Tampassook, which although it ran strong, and forced its fresh water over the salt for nearly half a mile from its *embouchure*, in 1844, was now quiet, and salt, within. The season has been peculiarly dry throughout the coast. As no persons showed themselves at the beach, and the rivers appeared to be more troubled with rollers than on our former visit, no time was lost here, but pushing on for Oosookan the ship found a safe anchorage on its western side, within a white rock, which is connected with the island. The 'Samarang' passed through this passage in four fathoms, trusting to a former line of soundings, but the day following proved that she had a very narrow escape, several of the rocks being very near the surface. Such however, is the common fate of Surveyors, who often pass unwarily over dangers of considerable hazard. My attention was now directed to the Port and River of Abai, where, indeed, we hoped to obtain a supply of fresh water, as well as bullocks from the Port of Ambong, immediately within us.

Of this region Dalyrmple remarks:—

"*Tampassook*, *Abai*, *Loobook*, and *Amboong* are inhabited by Mahometans, and form one jurisdiction. The first a fresh-water river, with a bar of two fathoms at high water; it is fresh at the bar, and within, has three and four fathoms, it is reported to come from the Lake of *Keeney Balloo*, and has a gold mine near it.

"The river of the Tampassook, a few miles inland, approaches very near that of Abai, which is salt for many miles up, leaving a long narrow Isthmus between them; the natives have had some thoughts of directing the Tampassook River across this into the channel of Abai, which is even now accessible at all times by small vessels, and would then probably be so by large.

"The harbour and river of *Abai* are superior to any between *Sampanmangio* and *Pulo Gaya* (and, indeed, is the only place where vessels have shelter from westerly winds) except *Amboong*, which is near to *Abai*, and is represented to be a good harbour. The country here abounds with grain, and considerable quantities of Pepper and Cinnamon would be had in a short time, were the cultivation encouraged."

With respect to the bar of Tampassook; that has now less than nine feet at high water, and we have shown that its freshness, outside, depends upon the rains. From our investigation of Abai River, it is probable that the description of Dalrymple is correct; but both harbour and river have, since his day, been filled up by sand, and comparatively disappeared; the eastern entrance affords ten feet on the bar, and that between Oosookan and the main, nearly dry at low water. The harbour of Abai may therefore be considered as affording, at present, nothing beyond boat shelter; and although provided with guides from Ambong,* they were unable to point out where fresh water could be procured. The river within, which meanders to the south-east, carries three, four, or five fathoms, by keeping on the left hand; the middle ground is very shallow. No villages were met with on the banks, nor any inducement for small vessels to enter, unless it be to receive cargo from Tampassook, or by arrangement with the Sultan of that place. If intending to embark bullocks, or horses, purchased from the Sultan, this river would be the most convenient spot to ship them (by boats) to the vessel anchoring in Oosookan Bay. This may answer for vessels well armed, but I consider this peculiar haunt of the Illañons at present unsafe ground. I am much surprised

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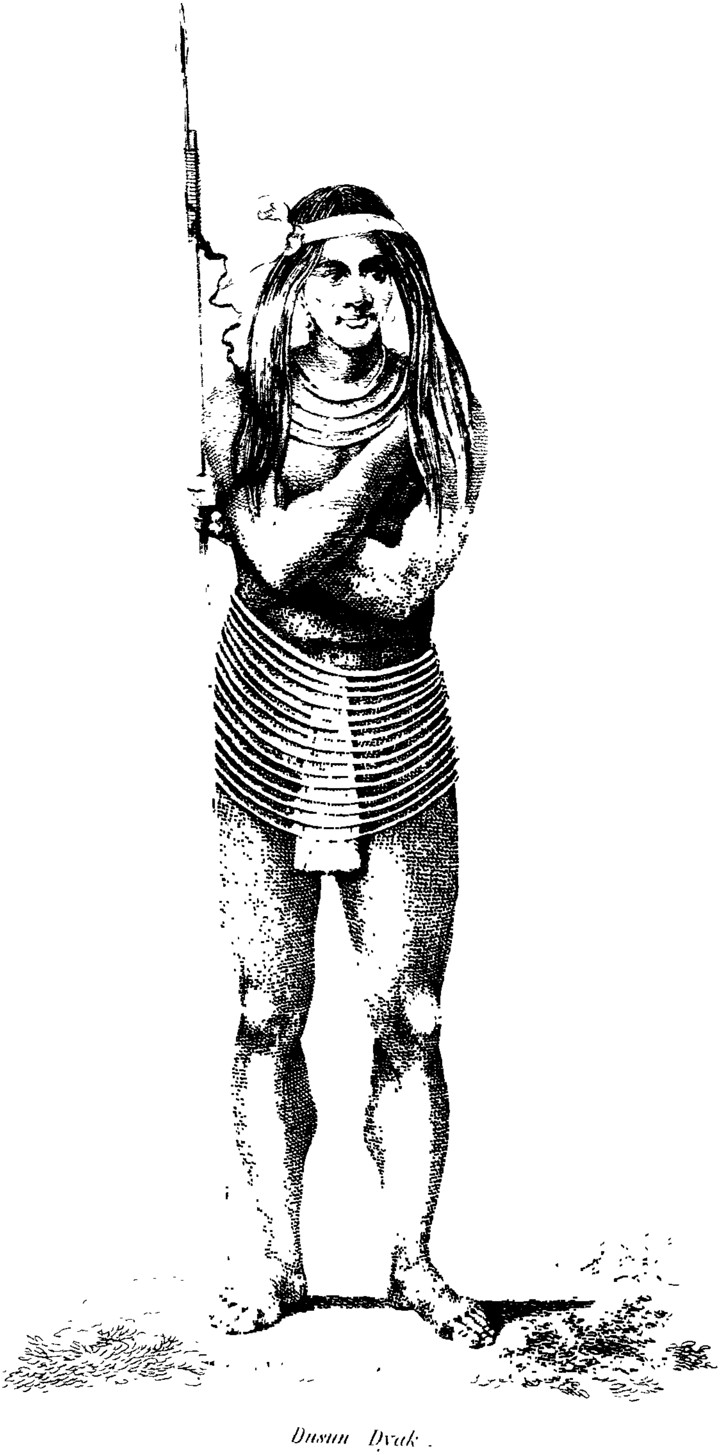
* Ambung is probably more correct.



Dusun Dyak.

Arthur Adams del.

[illegible] by Leighton Brothers

that Dalrymple should have overlooked the fine harbour of Ambong affording shelter to Ships of the Line; but as his communications were chiefly confined to Malay interests it is probable that they prevented his coming into contact with the *Idaan* *, or *Dusun* tribes of this region.

During our visit to Abai River, the Sultan of Tampassook came thither, by sea, to meet us, and accepted my invitation to visit the 'Samarang' on the following day. During his visit he endeavoured to impress on me the advantage of procuring our supplies, &c., from Tampassook, but on comparing the prices, which he wished paid in *silver*, we found that every article would be about 400 per cent dearer than at Ambong. He appeared very jealous about our preference for Ambong, and when informed of the lower prices at that port, I could perceive his Malay spirit rise, and his eyes flashing revenge as he observed to his Prime Minister "and yet these very cattle come from our city." He was accompanied by a slave, a native of Luzon, who had been kidnapped by the Illañons, at Ilo Ilo, and sold here for twenty-five dollars.

This man having stated his case to me, and asked for protection, was informed that he was free, but as he preferred returning with the Sultan, and making his escape by canoe, he was permitted to take his course, his principal object being, as I understood, to obtain rice to maintain him. After many friendly expressions from the

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* Dalrymple in describing the Idaan, makes use of the following:—
"There is a race of people in some part of the Sooloo dominions on *Borneo*, so peculiar in customs and opinions that they claim particular attention; these are called *Idaan*. It is proper, however, to observe, that what I know of them is only from the reports of the *Sooloos*."

Sultan, and explanations relative to his connexion by marriage with the Rajah Muda Hassim and Budduruddin, he acquainted me that they had received intelligence from Bruné that the Rajah and eleven brothers had been put to death by the Sultan's party, because they were too friendly towards the white foreigners. He expressed himself very much enraged at the act, and offered to assemble his forces and accompany me to Bruné, to punish the Sultan. Finding that I would not act with him, he requested permission to send his vessels under my convoy; upon this being declined, he begged that I would allow them to pass by me unmolested. As I had some suspicion of this Sultan, and that their voyage might turn out a piratical one, I declined answering. Shortly after daylight our Spanish, or rather Luzon, slave stepped on our decks a free man, and before the day had far advanced was rigged out as one of our crew, and quite at home. The 'Royalist,' which had been despatched to Ambong, returned with a supply of bullocks, and from one of the outer bays, near our anchorage, we had been fortunate enough to procure a small addition of tolerable water, although of rather a milky hue. A short visit to the Mantanani Group determined its dangers, but we found nothing interesting, either on shore or afloat, to delay us in that neighbourhood. From our different stations along this coast, but more particularly from Labuan, Ambong, Tampassook and Mantanani, very minute observations had been made, with a view to determine the height of the mountain of Kini Balu, which frequently afforded a most beautiful back-ground, particularly from the spot which we were now quitting, having its pinnacles standing out in beau-

Browne del. G Hawkins lith.

VIEW OF [illegible], Aug. 18 [illegible]

London, Reeve, Benham, and Reeve [illegible]

tiful relief between the continuous receding bluffs of Ambong, from the depth of which bay it appeared at dawn to rise perpendicularly, although at least twenty-seven miles inland. The position of the highest pinnacle was computed to be in Latitude 6° 8′ 24″ N., and Longitude 116° 33′ E., the mean height resulting from the three best stations giving 13,698 feet above the mean level of the sea.

We had hardly commenced our progress from Ambong when we discovered two suspicious prahus stealing alongshore; the advanced boats immediately pursued, and after about four hours chase came up with them at the entrance of the river Sulamán, about ten miles from Ambong; as their fittings and cargo did not, however, exhibit signs of piratical pursuits, they were allowed to proceed.

The river Sulamán, which is simply described by Dalrymple as "inhabited by Idaan" appears to be a much finer river than Tampassook, and accessible, without danger, to vessels of twelve feet. The inhabitants have extensive fisheries on its banks, but, either from the recent chase, or disinclination to communicate, fled upon our approach. It could hardly arise from fear, as at the period of my visit, after noon, all our large boats were absent, and the gig alone entered. From the mouth of the Sulamán to the river Kawalan is about two miles. Here we found an extensive village, and were visited by some of the people, who brought us presents of fish, and appeared disposed to be on friendly terms. They explained that they belonged to the boats chased in the morning, which contained nothing but cargoes of fish and rice for Bruné. The river is navigable, and not troubled with rollers; but the depth on its bar will not admit vessels drawing over six feet. Dalrymple terms this river "*Tawarran*, inhabited by *Idaan*; there are many goats in this district; it is very populous. About sixty Chinese, who left Borneo many years ago settled amongst them. The river is reported to be navigable for boats to the lake of Keeney Balloo."

The name Kawalan is scrupulously adopted from a very intelligent Malay fisherman; but I am inclined to think that *Tawarran*, as used by Dalrymple, is more correct, and, probably, immediately connected with the character of its waters, said to flow from the lake of Kini Balu, *tawar*, signifying fresh water. Kimanis has probably a similar character, *manis*, signifying sweet, that river also furnishing fresh water. The Cape *Sampanmangio* I have also been informed (by my friend Mr. Brooke) derives its name from its having been the rendezvous of the pirates, and is the corruption of the words *Simpang*, point, and *meng-i-ow*, which in seaman-like phrase may be reduced to "cruizing", or pulling off under oars. Mr. Brooke informs me, that with all his endeavours to trace the word *Idaan*, as used by Dalrymple, and adopted from him in this work, he has been unable to find it understood by any one inhabiting the region to which it is applied, and that it is possibly a Sooloo term. This is not improbable. It was so referred to as *I-daw-àn* by my naval friend at Gunung Taboor, but there it may apply to one of the *five tribes* which he named, as intervening between the *Sagai* and *Ka-dy-an* The papers containing these names, and much valuable matter, accompanied by Malay characters, has, unfortunately, been lost. Mr. Brooke seems to think it probable that Dalrymple was misled by the term *Ka-dy-an.*

The coast from hence runs to Mankabung Bluff; the river of this name being about two miles to the S.W. of it. It can be entered by boats, or small traders; the inhabitants, which appear to be of a friendly disposition, have a small village within, on the right. They offered us dried fish and fowls, but I suspect them to be very poor. Dalrymple remarks:—

"Mangcaboong river is inhabited by Islam, it is populous, there is a sand bar, with two fathoms at high water; at low, large Sooloo boats cannot enter within three or four fathoms; there is a salt lake about three miles from the bar, it has two fathoms, and in some places one fathom. The river above the lake is rapid and full of rocks, so that it is not navigable but by canoes; some say it comes from the lake of Keeney Balloo; but Dato Saraphodin thinks otherwise. This place, and those before mentioned produce some Pepper."

We now come to the Pulos Gaya, or Gaya Group, one of the best, and most completely land-locked harbours on this coast. It is formed by a high bluff on the east, to which I have given the name of Tanjong Gaya; by the Great Gaya Island on the west; and by the smaller Islands of Sapangar, Manukan, Manukan-Kichi, and a third nameless rock, stretching across the mouth. The main entrance lies between Sapingar and Manukan. Within these bounds lie situated the rivers Kabatùan and Inanàm.

The Kabatùan, which may be approached to within half a mile of its mouth, in five fathoms, is the more important, and is situated in the northern, and eastern angle of the great bay. Upon our arrival here, several canoes came down to visit us at one of our stations, close to the mouth of the river. As this occurred at sunset, and they exhibited a profusion of shields, bright muskets, &c., and their crews apparently ready for the fray, I declined their acquaintance for the night, communicating only with the leading canoe, and informing the chief that I should visit him in the morning.

On the day following the boat division entered the river, when the spokesman, or master of the ceremonies of their party, exhibited some alarm at our intention of ascending the river. Suspecting this to proceed from fear of our guns I offered to go in my gig, or even in his canoe. This was objected to, as frightening the people. After a long delay it was announced that the Sultan was coming, and shortly after arrived, in state, one of the half-brothers of the Rajah Muda Hassim, *Pangeran Madaout*, as he termed himself. From him, the intelligence of the murders mentioned by the Sultan of Tampassook, was confirmed, with the assertion that the same parties sought his life at Kabatùan, but that his party was too strong. His little son, *Tajudin*, a lad about eight years old, was with him, and instantly recognized me as one of his Sarăwak friends, holding up the kris of Budduruddin, the handle of which had been carved from a walrus tooth which I had presented to him. All the party appeared to participate in the depression which appeared to weigh heavily upon their Chief, on the loss of his relatives under such distressing circumstances.

The canoes which came down upon this occasion evidently expected to " make trade ", having full cargoes of black Pepper, fine Tobacco (much prized by connoiseurs), Bees' wax, Camphor (barus or crystallized), Sharks' fins, Béche de Mer, edible Birds' nests, Tortoise shells, and probably Pearls and Gold dust.

Towards night, a messenger came off requesting medical aid, and Mr. Adams having volunteered, started in a canoe to their assistance. It turned out to be merely some affliction of a trifling nature amongst the women; it afforded, however, an opportunity of seeing the country.

Under the promise of a visit from the Chief on the following day, the ship was moved close off the mouth of the river, but he was either afraid to trust himself outside his territory, or probably too much distressed to attempt it. This river can only be entered by boats; the outer edge of the bar, which stretches entirely across, is coralline, succeeded by sand at its shoalest part, where it is connected with a large dry sandy delta, occupying about two-thirds of the channel, and exhibiting symptoms of strong freshes. Immediately after passing this, the river deepens, and appears to afford a good space of water as far as the eye could reach. Our boats entered to procure water, but found that it was merely a small spring which fed a well, which our forcing pumps cleared in a few minutes. On taking leave of this Chief he begged to be remembered to his friend Mr. Brooke, of whom he spoke in very affecting terms, and to whom he looked forward for protection. Judging from the numbers of canoes, the population must be great.

The river Inanàm is situated about a mile and a half to the westward of the Kabatùan, and is still more difficult of approach, owing to the sand banks, which run a considerable distance off. Excepting the chances of communicating with the interior it did not appear to afford any advantage beyond that of a fishing station.

Dalrymple's account appears at fault here, I have therefore omitted further comparison.

The large Island of Gaya being connected by a reef, only admitting of a boat passage at high water, I consider the inner waters to belong to Gaya Bay. Exterior to it, westerly, we have other islands which certainly may be classed in the group, but which deserve separate notice. There are four immediately in connection to the westward, and three others scattered, named Sugara, Dinàwan or Salangar, and Llanliangan, named by us Button Island, stretching as far as the eastern horn of Pulo Tiga Bay. Within these islands are situated the rivers Papar and Pangalat. The river Kinarùt, which enters near the bluff of that name, is navigable by boats. The village is situated on the delta, formed by its smaller mouth, in the sandy bay, about two miles easterly.

The eastern head of the great Pulo Tiga, or Kimanis Bay, is Kinindukan bluff and Hummock. The first river is the Minani; it is barred, but boats can enter at high water. The next is Bangawàn, barred completely; but at a quarter of a mile southerly, we fell in with a natural canal, or strip of water, parallel to the beach, containing most excellent water. The ship was anchored in good muddy holding ground, within half a mile of the beach, and our wants completed with great ease. This spot is worthy of particular notice, as we were much distressed to find a good watering position, and had tried in vain all the reported wells and fresh-water rivers without success, Tampassook excepted, which I believe will always afford good water within its mouth.

Four miles southerly from Bangawan is the Kimanis river, the boundary of the Sooloo Territory, described by Dalrymple as ceded to the East India Company. We had been informed that this was a stream like the Tampassook, forcing its fresh waters into the sea. The prevailing drought had its effect here, and we were informed that it could only be obtained by sending our casks in native canoes up the river, an experiment which, in the present state of affairs, I was not disposed to try, independent of our having obtained as much as we required for the present. This river may be entered at high water by boats or canoes; the rollers are not troublesome on the eastern side of the mouth, where three spits, parallel to the coast, break it, and afford shelter within. Trade may be carried on with these people, who are of two distinct races, Bajow and Kadyan, but caution is necessary. A Malay orang-kaya governs at the beach, and from several facts I noticed, I think their mountain friends, the *Kadyans*, would not hesitate to obtain by force that which might be denied in barter.

Our operations here were attended with some difficulty. On the evening of my first visit, when unaccompanied by proper force, a feeling was exhibited which very much resembled a disposition to be troublesome, and I thought that I perceived suspicious motions, in recovering their arms which had been left concealed in the bush. An Oyster catcher, of a species anxiously wished for, but so often missed by me as to obtain the appellation of "the

Fairy ", as if bearing a charmed life, happened to alight at good ball range; the temptation was too strong: I fired, and, fortunately perhaps for the termination of the evening, the ball took effect. Our suspicious friends took the hint, bade us good night, and hoped to see us in the morning. On the day following I was attended by the two cutters, with their guns. Traffic for poultry, eggs, goats, &c., went on fairly, but the prices for bullocks, agreed on the previous evening, were very materially increased. We therefore purchased less than intended, which displeased the Kadyans.

The party on this river, are said to be neutral as to the late massacre in Bruné. One party being adherents of the Sultan of Borneo, the other, relatives of the Sultan of Tampassook. It was at this river, that Budduruddin (the half-brother of the Rajah Muda Hassim) overtook Pangeran Usop, and under an official warrant from the Sultan put him to death. This, it is stated, was the *boná fide* cause of the slaughter, which ensued, of the ten brothers of that party. They were civil to us, so long as our boat force was assembled, but I was informed, much inclined to give trouble after I quitted the beach. The people of the Kimànis assured us that we should find no more good men between them and Bruné, "that they were, principally, bad Bajows."

I have mixed much with all parties with whom I could do so without foolhardiness. The Malays, invariably, describe all the mountain races, as well as the Bajows, "bad and dangerous people." The same character is given of the Malays by their opponents, and, probably, as respects themselves, with some justice. But the poor Bajows tell you "we are the *poor* but *good* Bajows; and I have met with more apparent warmth of heart amongst them than amongst Malays. Any act of kindness which they perform, is with cheerfulness, not grudging time or labour. If the least act, even to obtaining a vessel of water, be attempted by a Malay, he carries it in the very manner, with the awkwardness of pride.

My own conviction is, that neither the Bajow nor any of the mountain tribes, Dyak, Kadyan, Dusun, or Sagai, will harm you, if they once comprehend who you are; but living in constant dread of their oppressive neighbour, the Malay, and habitually launching their weapons at any object not answering to their idea of friend, it not unfrequently happens that they are excessively shy in meeting Europeans, or dealing with them; the impression being, as explained to me by the Sultan of Gunung Taboor: "They consider you, in being superior to the Dutch, and to ourselves, as only capable of doing them *so much more injury.*" This was from an honest, clear-headed Malay, a Sultan, "who wished to be English, and to hoist the English Flag." When, therefore, the British character is better known on the east coast of Borneo I am satisfied that the visits of our vessels will be courted, not avoided as pests.

Westerly, from Kimanis, we fell in with the Membakùt, an insignificant stream; no natives were seen. This is succeeded by the Kuàla-làma, termed fresh. It is barred to anything above five feet draft, nearly dry at low water, and rollers dangerous. At this river we met with two prahus, the crews of which did not appear to be friendly, they were warned off, and departed rather sulkily. The last river in this great bay, is the Kuàlapànco. This is an extensive river, with a wide entrance, but barred to vessels drawing ten feet, or four feet at low water. No natives were noticed, either within its mouth, nor in its immediate neighbourhood. Northerly of this, the Pulo Tiga, or three island group, stands out to seaward, forming the western horn of this great bay. The largest of the group is nearest to the point of Borneo, and has a safe channel between, although a long reef showing clearly, as white water, extends from the southern part of the island, and is easily avoided. The current sets strongly easterly. Between the second and third, the channel is safe, but not without a pilot; between the outer and second, it is barred by an extensive flat of reef, studded with numerous rocks. The outer island, received the name of Bird Island from us, in consequence of the numerous bones and skeletons of birds found upon it. As we were delayed some time cleansing its summit for a station, an explanation of the unusual quantity of bones, &c., was offered by the self-capture of a bird in the toils which cover the trees, consisting of seed. These seed-vessels, belonging to an undescribed species of *Pisonia*, are covered with very minute recurved hooks, which on being applied to the skin, seem not only to have the power of tension, by the hook, but are also charged with a fine resinous matter, the combination acting equal to bird-lime. The bird settling on the tree, first finds the tips of its feathers caught, and, in the struggle to release itself, becomes hampered; the object, which we found surprised by these seed-vessels, had been entangled between the wings on the back, and was utterly incapacitated for flight; and being found in this state, fluttering for life, was brought to me. As the island was covered with the skeletons of large birds, it is to be presumed that they suffer the same fate, worse than that of the fabled Upas, as there, life becomes suddenly extinct, whereas this becomes a lingering death by starvation, and vain efforts at release; unless some knowing, superannuated bird of prey should take up his quarters beneath the trees. Bird Island is surrounded by a reef, which projects northerly about one mile, and south-westerly, about two. Four miles north of it, is a reef, with four rocks shewing above water, but the channel betwen it and Bird Island is safe by day. The dangers outside of it have not been examined.

Here the rivers contained between Sampanmangio and Labuan terminate.

CHAPTER XIV.

LABUAN TO MAURITIUS.

Coast of Bird Island—Attack of Pirates—Revisit Labuan—Discovery of a Watering Bay—List of Rivers—Lines of Coal—Reach Sarawak — Death of Mr. Williamson — Detail of Massacre at Bruné—Loss of the Sultan Muda Hassim—Observations on the Trading interests of Borneo—Letter from Mr. Jesse to the East India Company—Chinese located in the City of Bruné—Of the Mission about to sail for Borneo — Original Paper from Mr. Brooke, on the state of the Indian Archipelago, in 1838, bearing on the present aspect of affairs at Borneo—Leave Borneo, passing Tanjong Api and St. Pierre Islands—Land on Barren Island—Reach Singapore—Dullness of the town—Life and bustle introduced by landing of the Ship's Crew—Description of the town—Division of the Inhabitants—Manufacture of Pirate arms—Occupation of Pulo Brani, or Gage Island—Leave Singapore—Island of Billiton—Strike on a rock—Dangerous situation of the Ship — Lighten the Ship of Guns and Spars, and escape into deep water —New Island named Pigeon Island—Dangers of the Carimata Channel—Reach Anjer, Straits of Sunda—Opinion relative to the erection of a Lighthouse—Arrive at Cocos or Keeling Islands—Sailing qualities of the 'Samarang' class—Reach the Cargados Garajos—Transactions there—Visit Mauritius.

THE coast from Bird Island towards Labuan, is not safe to approach within the depth of twenty fathoms, until more closely examined. During our progress along the coast-line, I determined on walking the beach between two stations, in preference to calling the gig in to convey me, and accompanied by one of my boat's crew, carrying a fowling-piece, in addition to his musket, and our Spanish captive, now acting as interpreter in the Bajow tongue, was sauntering quietly along, the Spaniard walking at the water line, picking up shells abreast of me, my course being about ten yards above him, and the same distance from the trees. Suddenly, I heard a ringing shot, apparently behind me, and thinking the seaman was firing the fowling-piece at some object, turned round to inquire what he was about; his reply was, "they are shooting *you*, Sir," and advancing rapidly to give me the fowling-piece, darted towards the trees, where he suddenly discharged his musket. A yell from the jungle soon informed me that we were upon unsafe ground, and the gig was promptly in to support me. No one could be seen, and all was again quiet, when my poor Spaniard, who had taken it very coolly, shewed me his *frock*, which he said they had *damaged*. I then found that they had hit him instead of me, the ball cutting his *arm* and grazing his back, through his frock. Our force, consisting of the gig's crew, being now in fighting order, and the boats signalled to close, the cutter, with Mr. Richards, and second barge, with Lieut. Richardson, were soon moving towards us. In a few moments an armed party emerged from the bushes on our right, and held out a dirty cloth on a spear. They were warned back, but seemed to despise our warning. I therefore ordered musketry to be fired towards them. They immediately exhibited themselves in their true colours, cutting all imaginable capers of defiance with their shields, and swords, and using insulting gestures. The cutter was directed to give them a round shot, which went over them. This, they also derided, redoubling their defiance, and advancing, but the second round appeared to take effect, as they carried off their man, and quitted us altogether. Upon examining the spot where the affair took place, a well-fitted prahu, evidently adapted for war purposes, was found hauled up amongst the trees; she was launched, and taken to the ship. A few shot were then fired over a village seen through the trees on the heights, in order to show them, that, insignificant as our boats might appear in their estimation, their guns would throw their shot, effectually, much beyond their calculation, after which, we left them to ponder over the result of their wanton provocation.

On the 23rd April we anchored off the eastern passage to Labuan, and completed the survey of the outer dangers, left unfinished in November, 1844. In consequence of reports in circulation, relative to the entire failure of water, at the period that it was visited by the Squadron during the late year, my attention was principally directed to the discovery of this necessary, in sufficient quantity to support any establishment which the British Government might make upon this island, in consequence of the offer of its cession, which had been made by the Sultan and Chiefs through the intervention of Mr. Brooke and the Rajah Muda Hassim, and which, as before noticed, had been forwarded by me to the British Government in November, 1844. At my former visit, I found a strong stream rushing in cascade over the rocks on the eastern side near Collier's Bluff,* nearly on the line where the bluffs are succceded by low land. I knew, that the highest portion of the island lay to the northward of this, and pursuing the ordinary argument in sandstone formations, that even if this stream should fail in discharging itself into the sea, during any extraordinary drought, as that of the present season, common sense pointed out, that water would flow by the lines of inclined strata to any wells which might be judiciously sunk at levels below any of the higher ranges.

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* Named in compliment to Commodore Sir George Collier.

Our present examination afforded us another clue, and this was, the line of direction of the strata, which proved to be about north-east and south-west; the general slope of the land being to the southward. We therefore expected to find streams flowing in that direction. An examination of the old stream, alluded to on the east, proved, that although it did not now jet in cascade over the ledge, that not far within, it was still held in natural reservoirs, and although somewhat discoloured by the leaves, still sweet and well tasted. Pursuing our researches, we noticed many small fresh drains, and a few pools, but it was not until we arrived at the termination of what, in contradistinction to the Mangrove region, I shall term the skirting of *terra firma*, that we began to meet with decided fresh streams. I am the more inclined to notice this matter, because I fear that unwarrantable assertions, of the absence of fresh water fit for consumption, did, in some measure, damage my report on Labuan, as to its capabilities of sustaining a colony, and possibly for some months, I may say a year, retard the completion of this *important Treaty*.

It was not until we rounded the last bend of the land, and opened the south-west bay, that we met with any source which promised abundance, without recurring to the course, which must ever be preferred, the method by sinking wells.

Immediately on rounding the S.W. angle of the island, a large sandy bay is formed with the Southern Point. No less than *three* powerful streams were met, one of which was of sufficient force to cut its channel through a heavy sand-bank, three feet perpendicularly; and, tracing its course inland, appeared, by the profusion of floating timber, to be, in fact, a River.

Our object being thus satisfied, the most convenient spot for anchorage, as well as watering, had to be sought. The greater portion of this bay is studded with rocks, which, at dead low water, spring-tides would almost deter a vessel from venturing near them: but the most eligible spot will be found off the northern dry ledge, near to the termination of the Casuarina trees, in the sandy bight. Here the 'Samarang' and 'Royalist' found secure berths within a quarter of a mile from the beach, in five and a half fathoms, the boats landing at a smooth, but conveniently steep, sandy beach, within three hose lengths of the reservoir. This watering-place was, in itself, a natural curiosity; from the north, behind the Casuarina trees, and parallel to the shore, an extensive and deep strip of water was barred from the sea, and much above its level, by a barrier of sand, about thirty yards in width, by at least six in height; an unsuccessful attempt was made, by cutting a deep drain, to draw off this, which was *salt*, in the hope that fresh water would eventually flow. Separated, only, by a mass of rock about twelve feet wide, another strip from inland, nearly met this purely *fresh*. From this latter we procured during the day (8, A.M., until 7. 30, P.M.), eleven and a half hours, (all boats up and in) forty tons, besides 'Royalist', without sensibly diminishing the level. I think, therefore, that I may safely say, as at this period all the famed fresh rivers of Borneo were salt, from drought, that Labuan does not deserve this slur. If any reliance can be placed in Malay experience, I was informed, most positively, by a very intelligent old man, that "should all the streams of which he had given me information, fail, I might find sweet water in Labuan." As he furnished me also with his catalogue of the rivers I here annex them; *tawar* signifying sweet, and *masin* (*a-sin Bisaya*), salt.

Tampassook,	*tawar.*	Bangawàn,	*tawar.*	
Abaí,	*masin.*	Kimànis,	——	
Sulàman,	——	Membakùt,	——	
Kawalàn,	*tawar.*	Kuàla làma,	——	
Mankabùng,	*masin.*	Kuàla panco,	——	*masin ?*
Kabatùan,	*tawar.*	Kaliàss,	——	
Putatàn,	——	Badàs,	——	
Kinarùt,	*masin.*	Sarì,	*masin.*	
Gawàng,	——	Kangaràn,	——	
Pangalàt,	——	Bruné,	——	
Papàr,	*tawar.*	Tutòng,	——	(within fresh).
Minanì,	——	Meri (or red)	——	

The rocks in the vicinity of our anchorage were covered with most delicious oysters, of large dimensions, requiring to be quartered before eating, and the labours of watering over, men and Officers regaled themselves to their full enjoyment on them, roast, stewed, and *au naturel.*

Later reports * state that "the island is traversed by numerous streams, of which some are of considerable dimension, though only two appear to flow at all seasons of the year. Water, however, is found everywhere, by digging, in great abundance, and of the most excellent quality."

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* St. John.

As to the new geological features of the island, noticed on this examination, we found that the coal lines, or those on which we should estimate the probability of working, appeared to cut the island nearly in two halves, and that the western lines of direction, spitted out in a sharp ridge and islets, similarly to the northern reefs, (which are there under water) in parallels of N.E. and S.W. The dip of the S.W. islet inclining about 60° northerly.

After my report upon the coal measures of Labuan, in 1844, and with the recorded opinion of Sir Henry De la Beche to the Admiralty, "that the specimens forwarded were equal in quality to our best Newcastle," the idea of raising coal in any quantity upon this island was ridiculed. Indeed, the very question of acceptance of the territory met a similar fate Fortunately, however, through the able advocacy of Mr. Brooke, and I suspect in no small degree aided by his untiring advocate Mr. Wise, Government were induced to turn their attention, seriously, to the offer made by the Sultan; and in December, 1846, more than two years from the offer of its cession, the Treaty was completed, and the British Flag hoisted, under the customary solemnities, by Capt. R. Mundy, of H.M.S. 'Iris'.

What has been the result of later examinations? Just what might have been expected; by following up the next parallel stratum within the northern "crop out" near the sea, excellent coal was obtained, and no less than forty tons procured for the 'Phlegethon' steamer, worked as low, I believe, as 17*s.* per ton. Referring to my despatch of November, 1844, I find these words. "As this coal occurs at the surface on the northern part of Labuan; the dip at five miles southerly will, in all probability, secure larger beds at fifty to sixty feet below the surface." As to the other productions of Labuan, I believe that timber will be all that can be expected, and this, doubtless, will be required for the erection of the necessary buildings; the remainder will probably be consumed by fire in clearing the soil, as, until that desirable operation is complete, the land properly drained, and a free circulation of air ensured, it will be dangerous to reside on shore. The entire destruction by fire of all the trees but those reserved for shade and ornament, would greatly add to the salubrity, and, as the surrounding shores and islands are plentifully stocked with timber, their loss would never be felt on Labuan.

Fish is abundant upon all the coasts of Borneo, and from the purity of the sea near Labuan, being free from the muddy admixture of the river, it is highly probable that they may prove of superior quality; I cannot, however, agree, from personal observation during my visits in 1844 and 1846, in the story of between two and three hundred persons pursuing the fisheries; I think that we noticed, in all, about half a dozen boats. On the occasion of my last visit, one canoe, carrying a person evidently a spy from Borneo, fearlessly came alongside my gig, and, in reply to my interrogations, assured me, "that no vessel of war had for six months past been at Bruné, or in this neighbourhood," an assertion, which I knew to be untrue, as the 'Royalist' had met H.M.S. 'Hazard' and learned from her Commander, of the attempt to entrap him in March last, at Moarra, immediately after the massacre of the Rajah Muda Hassim and his brothers. This man was not ignorant of that affair, and upon being questioned why the Sultan had acted in such a manner, merely shrugged his shoulders and observed "that was the Sultan's affair; poor people never troubled themselves about such matters." Not having any authentic information relative to this affair, and perfectly satisfied that no good could result from my visit to the city, I determined on moving forward to Sarãwak, where I should be able to obtain complete information from Mr. Brooke.

On the 30th, having reached the Moratabas entrance of the river, the 'Samarang' was moored off Tanjong Po, and instructions left for perfecting the exterior lines of soundings. Quitting the ship, with the barge and gig, I moved on with the remaining flood-tide, reaching the inner entrance shortly after dark. Here we met with several prahus at anchor, who did not at first like our visit, but upon our inquiring for Mr. Brooke became more at ease, and informed us, that he had lately quitted in the Kapal Api (steamer, literally, fire ship) for the Siriki river. As the ebb tide had made, we remained at anchor until dawn, when we pushed on with the flood, and reached Kuching about 7 o'clock, where we were welcomed by our old acquaintance Mr. Roepell, who confirmed the report of Mr. Brooke's absence, but expected him to return in seven days. I here found a note from Mr. Brooke, most kindly desiring me to take possession of his house, and hoping to return in time to meet me.

Here we obtained full particulars of the lamentable massacre at Bruné. Nor was Sarãwak without its loss; Mr. Williamson, the very talented interpreter of Mr. Brooke, and a great favourite with every one who knew him, had fallen overboard from his canoe at night, at the very steps of Mr. Brooke's landing-place, and sunk to rise no more! I am satisfied that not even to his own immediate circle at Sarãwak, was the intelligence of his loss more painfully felt than to his old friends of the 'Samarang,' to whom his acts of kindness during our distress were unremitting. Mr. Brooke's note to me fully bore out the great loss which he sustained; and the public service on northern Borneo has much to deplore the absence of his abilities: as the medium of communication between the natives and the establishment at Kuching, his death will be much felt.

Not having seen Mr. Brooke on this occasion I cannot do better than add here the following extract from the Singapore paper, describing the massacre at Bruné, as as well Mr. Brooke's present cruize.

"The following information relative to the barbarities of the Sultan, we believe to have been detailed on oath before Mr. Brooke by one Japper, a native of Bruné, and servant of the murdered victim, Pangeran Budduruddin. Japper stated that he was sent by his master on board H.M.S. 'Hazard' to warn Captain Egerton against any treacherous artifice which the Sultan might employ to entice him on shore. For the better understanding of the nature of the intelligence entrusted to Japper, Captain Egerton proceeded with him to Sarãwak, where he communicated to Mr. Brooke the murders which he witnessed at Bruné. From the testimony of Japper, it appeared, that the Rajah Muda Hassim (by the Sultan raised to the title of Sultan Muda, or young Sultan,) who, together with his brothers and followers, was living in security under the protection of the Sultan, was, by the orders of the latter, attacked at night, and slain, as also thirteen of his family, residing at different places. Pangeran Muda Mahomed, Pangeran Abdul Kader, Pangeran Abdul Raman, and Pangeran Misahut, the four brothers of the Sultan Muda, and several young children of the Sultan Muda, alone escaped the massacre. At the time of the attack Japper was in attendance on the Pangeran Budduruddin; the latter, notwithstanding, that he was somewhat taken by surprise, fought gallantly. Wounded in both rists, severely cut down the forehead, the Pangeran Budduruddin was compelled to retire within the house, accompanied by his sister and a female attendant, named Noor Salam. Both women were wounded, as also the servant Japper. As there was no chance either of overpowering the Sultan's assassins or effecting his escape, the Pangeran Budduruddin resolved to terminate his sufferings and those of the women: he desired Japper to open a cask of gunpowder and to strew it on the floor; this done, he removed his ring from his finger, gave it to Japper, and requested him to convey it to Mr. Brooke, at the same time urging Japper to request that Mr. Brooke would bear him in remembrance, and make known his case to Queen Victoria. Japper bidding his master farewell, got through the flooring to the river (which the house being built, as is customary, on piles, enabled him to do) and effected his escape. Immediately after Japper's departure the Pangeran Budduruddin fired the train, and he, with the two women, was blown up.

"The manner in which the Sultan Muda Hassim and others of his family were slain, is not detailed; Japper probably knew of their slaughter only from what he heard: his information being confined to what he was an eye-witness of. After much difficulty the servant Japper got clear of the assassins; the ring entrusted to his charge is stated to have been taken from him by the Sultan, but where he fell in with the Sultan, and how the latter possessed himself of the ring is left to conjecture. Respecting the murder of the Rajah Muda Hassim (Sultan Muda) Japper remarks, that "the Sultan and those with him killed the Rajah Muda Hassim and his family," from which we may infer that the Sultan was present at, and encouraged, the slaughter.

"The motive of these cruel murders is well known. The Rajah was friendly to the English, which displeased the Sultan, who being under the influence of the Dutch authorities at Batavia, was inimical to the establishment of a British colony in Borneo. In support of the ill feeling entertained by the Sultan to the English, Japper is understood to have stated on oath before Mr. Brooke, that the Sultan had built forts at Borneo Proper, and set the English at defiance; indeed, to such a length had the Sultan's insolence and treachery proceeded, that in open Durbar he talked of cutting out any English vessel that arrived; in support of this bravado, Japper declared (on oath) that two vessels were sent down bearing the flag of the Rajah Muda Hassim (the known friend of the English) to entrap H.M.S. 'Hazard', and murder all on board. As if the last-mentioned act of treachery was not enough, the Sultan is sworn to have requested one Nakodah Kalab to proceed to Kaluka, and, in the Sultan's name, desire the Pangeran Makota, by treachery or forcible means to destroy Mr. Brooke.

"Under the circumstances we have noted above, Mr. Brooke on the 1st of April addressed a communication to the Strait authorities, detailing what had occurred, and soliciting, that, as at no time since he had been Her Majesty's agent at Borneo had there been so urgent a necessity of exhibiting to the natives of Borneo the power and influence of the English, the Strait authorities would be pleased to send an armed steamer to Sarãwak. The request was cordially entertained by Colonel Butterworth C.B., Governor of the Settlements. This information was brought by H.M.S. 'Hazard' just as the steamer was about to leave with the overland mail to Europe; the steamer was detained some hours to communicate to the Bengal Government the position of affairs at Borneo.

"On the 19th of April the H.C. Steamer, 'Phlegethon', which under Captain Ross and her present officers, has rendered several useful services to the state, was despatched from Singapore, and arrived at Sarãwak at noon on the 23rd. On the 26th the 'Phlegethon' dropped down the river, and on the 28th started with Mr. Brooke to the eastward. On the 29th the steamer entered the river Redjang. On the following day arrived at Serikye, where a party from the steamer landed, and for three successive days conversed with the Patinga Abdool Raman, the head man of the place. The nature of the conversation did not transpire. On the 3rd of May the 'Phlegethon' again started, having on board the Tuanku and a large party of natives, who were afterwards landed at the entrance of the creek: the steamer passed into another river, up which she steamed till dark and then anchored for the night, about sixty miles from the coast: the river is described as broad and deep, with a rapid current. No Dyak boats were met in proceeding up the river, although it is reported that numerous parties were in the habit of passing down the river to the sea, for the purpose of committing piracies. On the 4th, the 'Phlegethon' passed the junction of two large rivers at Marling, entered the Battang Baliou, and at 4, P M., anchored off Egan, where a party from the steamer landed and had an interview with the Tuanku Schriff Sakarran.

"May 6th. Steamed out of the Battang Baliou, and proceeded twelve miles up the coast to the eastward. Entered the Owah river and anchored off Owah at noon; at this place a party went on shore, and had an interview with Pangeran Matalee. The Owah river is described as small, the entrance shallow, with about one fathom and a half over the bar. At Owah the 'Phelegethon' remained till the 9th, and steaming out the same day, conveyed the Pangeran and a large party of natives to the entrance of the river. May 10th, arrived at Sarãwak, via Moratabas, and remained there some days. On the afternoon of the 18th the 'Phlegethon' left Santobong, with Mr. Brooke on board, steered round Tanjong Sipang to the eastward, and early on the morning of the 19th anchored off the Batang Lupar river: at daylight passed up the river to a branch proceeding to Linga; at this place the chiefs, with six large war boats full of people, came to pay their respects to Mr. Brooke; whilst here those on board the steamer saw twenty-four boats proceeding up the river to attack the Sakarran Dyaks. These latter people are the enemies of Mr. Brooke, and live by piracy: they had not long since attacked Linga, where they killed upwards of 100 people, and carried off 150 slaves.

"May 20th, weighed anchor early in the morning, steamed out of the river, and crossed the bar in one fathom and a half at low water. At 11, A.M., entered the Kalukka river, and anchored off the town. At Kalukka a party from the vessel had an interview with the chief man of the place, who is an Arab; at this place met Pangeran Der Makota (a known enemy of Mr. Brooke) who was on a visit from Sambas. On the morning of the 26th the 'Phlegethon' left Sarãwak, and arrived at Singapore on the 29th, at noon.

"The object of despatching the steamer has been fully answered; it was desired only to produce a moral effect by exhibiting to the natives of Borneo that the British Government was as resolute, as it is able, to maintain supremacy wherever its flag appeared; in this respect the mission succeeded, and so well, that we are at a loss for terms sufficiently adequate to acknowledge the humane conduct of Mr. Brooke, on the one hand, and the manly bearing of the Commander of the steamer and his Officers on the other. Several Pangerans of places where the 'Phlegethon' visited were surprised at the appearance of an armed steamer; most of the inhabitants had never seen anything larger than a native prahu. The moral effect of the appearance of a steamer will serve as a check to the piratical Dyaks for some time. In the course of a few months it is most probable that the Admiral, with a powerful force, will proceed to the seat of Government and compel the Sultan to give an account of his conduct."

This servant of Budduruddin, above alluded to, happened to be one of a party sent from Bruné under the well-known standard of the Sultan Muda Hassim, in order to decoy Captain Egerton, of H.M.S. 'Hazard', into their power. This it was proposed to effect by inviting Captain Egerton to land on the Island of Moarra, situated at the outer entrance of the Bruné river, to walk or amuse himself, when it was intended to capture, or murder him: he was not inclined to land, and thus frustrated their object. Japper escaping to the 'Hazard' informed Captain Egerton of the plot, as well as of the massacre of his master and connections. As the interpreter on board the 'Hazard' did not appear sufficiently *au fait* at his business, Capt. Egerton thought it preferable to take him to Sarăwak, where he would not only learn the truth but also obtain the advice of Mr. Brooke as to further operations. The statement, therefore, that Japper had been sent by his master to warn Capt. Egerton is absurb, as the massacre took place before the arrival of the 'Hazard'. As Budduruddin was particularly attached to Mr. Brooke, and the friendship, I believe, was mutual, it is highly probable that he was sent to warn any English vessel which might arrive, and through her means seek Mr. Brooke. The loss of Pangeran Budduruddin can only be duly estimated by those who had the pleasure of knowing his worth. Quick, enterprising, and intelligent to a degree, beyond any of his countrymen, he was not only the favourite of the English, who happened to visit Borneo, but he was a staunch supporter of our interests, to which, indeed, I fear he has fallen a martyr. The loss of two such staunch friends, as the Sultan Muda Hassim and his half-brother, to the general interests of humanity, as well as commerce, is much to be deplored. As an inquiry into these matters will shortly take place, it is to be hoped that something more authentic than the report of Japper may be forthcoming from the Officers employed on that service. At the moment of committing this to the press Mr. Brooke has arrived in England, so that, before he returns, we may, probably, be favoured with some authentic details relative to these matters, as well as his visit to Siriki, an important river, immediately in the neighbourhood of his own territory of Sarãwak.

Having waited most anxiously for Mr. Brooke, until the shortness of our provisions rendered further delay hazardous, we gave up further hopes on the morning of the 8th of May, directing our head for Singapore. On the evening of the 9th, we fell in with Mr. Brooke's schooner, 'Julia' off Tanjong Datu, having on board Lieut. Elliot, of the Madras Engineers, the energetic Superintendent of the Magnetic Observatory at Singapore, who kindly paid me a visit during the calm which prevailed. Lieut. Elliot was on his passage to pay Mr. Brooke a visit, after which he purposed carrying out, at his own cost, a series of Magnetic Observations in every accessible part of Borneo. On the 10th we cleared the Borneo shores.

I cannot take leave of this portion of the world in which all my feelings have been so deeply interested, without a few words, influenced by the very decided measures, which I am happy to find our Government intend carrying out.

The trading interests of Borneo, or the probabilities of our commerce increasing in these regions to the amount contemplated by some over-sanguine advocates, requires to be guarded against. From the year 1843 to the present time, I have made it my study, as it was my duty, to collect and weigh every minute circumstance which could bear upon this most important subject; nor will I yield to any one in feeling of deep interest for the success of our new position. At Singapore, as well as at Hong-Kong, Manila, and Sooloo, some of my readers will understand the assertion I make, "that I not only used every effort to open trade direct with Gunung Taboor, Tambisan, and Kabatuan; but at my persuasion, two persons have made the attempt;" others met me with the observation: "All which you state is very true, and the prices are favourable in the highest degree, *but you cannot warrant half a cargo, even for a small schooner.*" At Gunung Taboor the Sultan bound himself to supply a cargo for one vessel filling up with rattans, Cassia bark, &c., but more he could not promise, as the collection of *one year*. At Kabatuan, I was informed, that beyond about thirty canoes present, the same quantity of Pepper might be added, but no more. At Kimanis, it was probable that Pepper, Wax, Camphor, and Bird's nests, would afford twenty canoe loads. All these proceeds would amount, possibly, to ten tons, stripping the coast for the season. Treating of Maludu Bay, and the sources of trade to be derived from that region I have observed p. 124, "That the establishment of a British port or colony on any part of the northern shores of Borneo, will not, I suspect, induce any of the native authorities to *send* there for sale." This remark is intended to apply to cargoes, or quantities. The small traders will, as remarked to me by Mr. Brooke, creep alongshore, and find their way to the best market. But until the colony is firmly settled, and piracy annihilated on the range of coast by which trade must pass, this state of affairs will be slow of arriving; and when it does, still, until the habits of the inland tribes become settled, and they plant for, and send to your market, the same scantiness of tonnage must prevail. I must still adhere to the only feasible plan of inducing trade by sending small craft to the ports in immediate connection with the Bruné territory, that is, between Maluda Bay and Labuan, and collect at the intermediate ports of Tampassook, Ambong, Sulamàn, Kabatùan, and Kimànis, what the Kadyàn or Dusùn will bring to the coast, for we cannot jump to the conclusion, that the cultivators will turn navigators to get rid of their produce; otherwise, my original evil, the intervention of the Malay or Bugis, comes in to destroy the advantages of direct commerce.*

My professional brethren will probably take alarm at this apparent *trading disposition,* contrary to Act of Parliament, &c.; but they will cease to feel any surprise when they learn that in all voyages of discovery, exploration, &c., it becomes the bounden duty of the Commander not only to ascertain the produce of the countries which he visits, but to collect samples, &c.; and in order to facilitate these measures, as well as to ensure supplies of fresh food and vegetables for his crew, that he is supplied with the necessary articles of *traffic* "by Authority of the Lords Commissioners of the Admiralty", thus taking away the venom fang of the law.

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* "In connection with the occupation of the new colony of Labuan, it is mentioned that the good effects of that measure are already developing themselves. The communication between Singapore and Brunè is now frequent, through the medium of trading vessels, and it is expected that the next annual returns will exhibit a considerable increase in commercial operations with that quarter. 'Raw Sago', it is

To proceed to business; at Ambong, being *present* in the port, we purchased for the use of the crew, one bullock for forty yards of long cloth. These forty yards cost in England 9*s.*; the value of one bullock, 181 lbs., therefore, is 12*s.* The largest, sixty yards, 230 lbs., the smallest forty yards, 160 lbs., mean average 181 lbs. Bees'-wax, 1 cake=12 lbs., ten yards=2*s.* 6*d.*, little more than 2*d.* per lb. Now at Kabatuan, one cake of Bees'-wax of 12 lbs., was valued at seven yards, equal to 1*s.* 5½*d.* At Kimanis, 25 lbs. of Pepper were purchased for ten yards, =2*s.* 1*d.*, or 1*d.* per lb. Would any of these articles be *delivered at Labuan,* at a less profit to the carriers than 500 or 800 per cent.?

The following extract is the substance of a letter to the Court of Directors of the East India Company, from Mr. Jesse, the 20th of July, 1775, at Borneo Proper.*

observed, 'appears to be in great abundance. It is converted into flour and pearl for the European market.' Of the eleven piratical prahus lately attacked by the 'Nemesis' it seems that only three have escaped back to that place."—*Times* (City article), Oct. 25th, 1847.

* Dalrymple's collection.

"The *Chief* and *Council* of *Balambangan*, in the beginning of the last year, addressed a letter to the *State* of Borneo, informing them of their arrival at Balambangan, and wishes of entering into alliance with them. In consequence of this invitation an ambassador arrived from thence in *June*; and I had the honour of being appointed to return with him, to open an intercourse there, and to enter into such engagements as might appear most to the Company's advantage.

I arrived there in the month of August, and found them unanimous in their inclination to cultivate the friendship and alliance of the Honourable Company: in consequence thereof, I made it my first care to discover the motives which principally induced them thereto, that I might be the better enabled so to frame my Treaty, as to keep them dependent in such particulars they most essentially stood in need of; which I then found to be, and have since been confirmed therein, was protection from their *Piratical neighbours*, the *Sooloos* and *Mindanaos*, and others, who make continual depredations on their *coast*, by taking advantage of their natural timidity. To relieve them, therefore, in this particular, and to induce them the more readily to consent to my subsequent proposals, I stipulated by one of the articles, that (if attacked) the Company should protect them; and having thus gratified them in their principal want, in return, I demanded for the Company, agreeably to the tenour of my instructions, the exclusive trade of the Pepper: as I well knew it was the grand object they wished to attain, and I therefore made it my study to be thoroughly acquainted with every particular relative thereto. I was informed the quantity that year was 4,000 Peculs, cultivated solely by a colony of *Chinese*, settled here, and sold to the *Junks* at the rate of 17¼ Spanish dollars per pecul, in *China-cloth*, called *Congons*, which, for want of any other specie,* are become the standard for regulating the price of all commercial commodities at this Port. Although I was well convinced it would not answer the Company's purpose to pay so high a price for the *Pepper*, especially where the quantity was so small, I notwithstanding, in the Treaty, made a point of securing to them the exclusive trade of that article, to be paid for in merchandize, at such rates as might indemnify them at present, in the inconvenience of the high price, to the end that it might divert the *Junk trade*,† from this to Balambangan (their grand inducement for coming here being thus removed), which, together with my having bound the state to oblige all their dependants to make plantations, whereby the quantity would not only be greatly increased, but from their having no other purchasers, the Company would be enabled to fix such prices as would give ample encouragement to the Planters, and soon reimburse the expences, which were necessitated to be borne at the beginning of the undertaking; and the more so, as, in consequence of their industry, becoming yearly richer, they would find our protection but the more indispensibly necessary.

"Things being fixed on this basis, the *Englishman* and *Borneyan* becoming thus mutually necessary to each other, I flattered myself the event might have produced a solid and real commercial advantage, as well to the nation as to the Company, and the more so, as from the great probability of the *Hill People* being soon induced also to plant, who, by receiving *cloth* as the price of their industry, would naturally increase the consumption, and render our *manufactures* with them a *necessary of life*; these being by far the most numerous, and the *Aborigines* of the *island*; another advantage accruing therefrom, is, that having once connected these people in interest with the Company, and familiarized them to our customs, the inhabitants of the sea coast would be unable (were they inclined) to obstruct or molest the prosecution of the Company's views. These were the motives which first induced me to secure to the Company, in the treaty with the *Borneyans*, the exclusive trade in *Pepper*, although at that time on seemingly disadvantageous terms; how far I may have acted with propriety remains with the Company to determine."

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* They use bits of iron, at present, weighing about four ounces.

† Doubtful policy.

The same writer observes:—"With respect to the *Idaan*, or *Mooroots*, as they are called here, I cannot give any account of their disposition; but from what I have heard from the Borneyans, they are a set of abandoned *Idolaters*; one of their tenets so strangely inhuman I cannot pass unnoticed, which is, that their future interest depends upon the number of their fellow creatures they have killed in any engagement, or common disputes, and count their degrees of happiness, to depend on the number of *Human skulls* in their possession; from which, and the wild disorderly life they lead, unrestrained by any bond of civil society, we ought not to be surprised if they are of a cruel and vindictive disposition."

With respect to the policy of discouraging the resort of the Chinese to Bruné, I am much inclined to differ from this writer. The number of Chinese supposed to reside at one period in the city of Bruné exceeded several thousands; at that period trade prospered, there was an interchange of commodities, and the useful arts were pursued. Upon their departure the Malays fell back into their idle sluggish condition, and instead of advancing as a civilized community, retrograded into their original character of Rover or Pirate.

We are now anxious to introduce the Chinese, for without their aid in the working of the mines, and interior traffic, commerce will progress but tardily; British constitutions are not calculated to undergo the severe labour of the Chinese Cooly in such a climate as Borneo. Another prospect is dawning, and with it the chance of seeing stationary depots established amongst the mountain tribes.

The following introduction to extracts from the Colonial Church Chronicle relative to the "Borneo Mission" so fully agrees with my formerly recorded opinions upon these matters, that I cannot forbear inserting it.

"Though we have never concealed our antipathy to the system commonly pursued by missionaries in the South Seas and on the coast of Africa,—a system which, beginning by overthrowing all old beliefs, and rudely teaching new truths utterly incomprehensible to the untutored heathen, has ended, almost without exception, by lowering instead of elevating his moral state—we have always been ready to admit that a real Christian mission, conducted in a proper spirit, is at once one of the noblest occupations to which our clergy can devote themselves, and the surest means under Providence of spreading civilization among the barbarous tribes. It is because we are convinced that the Mission shortly about to sail for the shores of Borneo, and which has awaited the arrival of Mr. Brooke to receive the benefit of his advice, is as far removed from the ravings of the illiterate gospellers to which we first alluded, as it nearly approaches in many points to that ideal of apostolic teaching, of which the Christian world after the downfall of the Roman Empire affords so many bright examples, that we are induced to lay before our readers the following extracts from an able article on the Borneo mission, which recently appeared in the 'Colonial Church Chronicle'".—*Times*, October 16th, 1847.

These extracts can be found in the publication alluded to; I shall, therefore, confine my observations to those points to which my attention in the South Seas was particularly directed. There I could trace four varieties of Missionaries: one well deserving the thunder of the first eight lines of the above article. But the one to which I will especially allude is of the Williams school, alluded to in vol. ii. p. 17 of the 'Voyage of the Sulphur', Raratonga, "It is pleasing to witness the influence Mr. Buzacott has acquired; not the servile fear of the Sandwich Islanders, but an honest, warm-hearted attachment. He is a pattern for Missionaries. They prove their superiority by their *ability* to instruct others, and they leave behind them lasting monuments of their utility, in the increased civilization and happiness of the people."

These remarks recur to me on perusing the observations extracted from the pamphlet of the Rev. C. D. Brereton. "If a case of misery ever called for help, it is here; and the act of humanity which redeems the Dyak race from their unparalleled wretchednes, will open a path for Religion and for commerce, which may in future repay the charity which ought to seek no remuneration.

"Three clergymen, the Rev. F. T. M'c Dougall, W. B. Wright and Mr. Montgomery, have been appointed; it is anticipated that great benefit, in regard to the object of the mission, will be derived from the medical knowledge of Mr. Mc' Dougall, who is a member of the College of Surgeons, and was, before he entered into Holy Orders, Demonstrator of Anatomy in King's College, London. He will be prepared to avail himself of any opportunities that may offer of conciliating in this way the good will of the natives, and conferring upon them those temporal benefits which may lead the way to the communication of spiritual knowledge."

I have had the pleasure of being introduced to Mr. M'c Dougall, and cannot but cordially congratulate Mr. Brooke on carrying out with him such a specimen of a thoroughly useful man. The abilities and handycraft of Mr. M'c Dougall will force themselves readily with the natives; for untutored as they are, there is a peculiar neatness and adaptation in all that belongs to them, even in their carriage, which evinces a little more intellect than is generally assigned to them. The Dyak is a dandy *sui generis,* and upon everything they use, or fabricate, taste is impressed. But I would still adhere to Mr. Brooke's advice: "Let our motto be, Create no jealously". Advance is certain, guided by prudence, but distrust of motives resulting from ignorance on their part, may cause difficulties not easily removed. During my first visit to Mr. Brooke, at Sarãwak, in 1843, he very kindly lent me for perusal several papers, penned in 1838, connected with his original intentions in taking a voyage to the Eastern Archipelago, and as they bear, in a most remarkable manner upon our present relations in Borneo, as well as the mission in question, I now, with his permission, introduce them.

"Whatever difference of opinion may exist, or whatever degree of credit may be due to the views which I have recommended, there can be no doubt of the future advance of our commercial interests in the Archipelago, and a previous acquaintance will therefore greatly facilitate the result, and must, in all probability, tend to a more just appreciation of these highly interesting countries; for when public attention be once aroused, and a stimulus given to inquiry, it cannot fail in fully developing the resources, and exhausting the mine which has hitherto been left to the weak and casual efforts of individual assertion. It has been remarked by Mr. Farquhar, that the indifference of the British Government must have originated solely from the want of information, or incorrectness of knowledge, since it is not improbable, that the riches of Sumatra and Borneo are equal to those of Brazil and New Spain. The lapse of years has by no means weakened the force of this observation, for Borneo, Celebes, and, indeed, the greater portion of these islands are still unknown, and the Government is no less indifferent now to these countries, equal in riches, and superior in commercial advantages, to the New World.

The apathy of two centuries still reigns supreme with the enlightened people of England, as well as their Government, and whilst they willingly make expensive efforts favourable to science, commerce, or Christianity in other quarters, the locality which eminently combines these three objects is alone neglected and alone uncared for. It has unfortunately been the fate of our Indian possessions to have laboured under the prejudice and contempt of a large portion of the well-bred community, for whilst the folly of fashion requires an acquaintance with the deserts of Africa, and a most ardent thirst for a knowledge of the usages of Timbuctoo, it, at the same time, justifies the most profound ignorance of all matters connected with the Government and Geography of our vast possessions in Hindostan.

"The Indian Archipelago has fully shared this neglect, for even the tender philanthropy of the present day, which originates such multifarious schemes for the amelioration of doubtful evils, and which shudders at the prolongation of apprenticeship in the west, for a single year, is blind to the existence of slavery in its worst and most exaggerated form, in the east. Not a single prospectus is spread abroad, not a single voice upraised in Exeter Hall to relieve the darkness of Paganism and the horrors of the slave trade! Whilst the trumpet tongue of many an orator excites thousands to the rational and charitable object of converting the Jews, and reclaiming gypsies, whilst the admirable exertions of missionary enterprise in the Austral climes of the Pacific, have invested them with worldly power, as well as religious influence, whilst the benevolent plans of the New

Zealand Association contemplate the protection of the natives by the acquisition of their territory, whilst we admire this torrent of devotional and philosophical exertion, we cannot help deploring that the zeal and attention of the leaders of these charitable crusades have never been directed to the countries under consideration. These unhappy countries have failed to rouse attention or excite commiseration, and as they sink lower and lower they afford a striking proof how civilization may be crushed, and how the fairest and richest lands under the sun may become degraded and brutalized by a continuous course of oppression and misrule. It is under these circumstances I have considered that individual exertions may be usefully applied to rouse the zeal of slumbering philanthropy, and lead the way to an increased knowledge of the Indian Archipelago."

These were the remarks of Mr. Brooke in 1838. Since that period great and important events, as regards Borneo, have occurred to change these sentiments; all, and even more than he then contemplated, has gradually been brought to pass, and we have not only to hail, through his agency, and extraordinary tact and perseverance, the British colours, and a British colony planted in Borneo, but also to congratulate him on the thorough success of his long cherished views of the improvement of his Dyak allies, through missionary agency. I now take my leave of Borneo, earnestly wishing Mr. Brooke and his territories (to which I trust Borneo Proper may eventually be added, with the full recognition of this estimable individual as Sultan) all the success which his most sanguine desires can hope for.

Passing Tanjong Api and the St. Pierre Islands, we were again making fair progress towards Singapore, but on the 14th, had only reached the vicinity of Barren Island, when calms again delayed. This afforded me an opportunity of fixing its position, and of procuring quantities of the eggs of Tern, and other marine birds, with which it abounded. Its position was determined to be in Lat. 1° 32′ 22″ N., Long. 106° 22′ 18″ E.

On the 17th of May our provisions had run so short, bread being entirely exhausted, and light airs still prevailing, that I deemed it prudent to despatch our barges ahead to Singapore; they quitted us on the morning of the 18th, about 9, A.M. On the 20th, aided by favourable flaws of wind, we were able to creep into the Straits, and about 10, A.M., perceived the barges, as well as the pinnace, of H.M.S. 'Hazard' approaching, when calm compelled us to drop our kedge. About 2, P.M., the ship anchored in the roads of Singapore, where we found H.M.S. 'Hazard'. Orders for our return to England awaited our arrival with instructions to examine the Cargados Garajos on our homeward voyage. Later instructions from the Commander-in-Chief, who had arrived at Penang, delayed us until his appearance.

Singapore, as regards its local advantages, has undergone considerable improvement since I first became acquainted with it, under the government of Mr. Bonham, in 1840. The lines of streets, then only marked out by slight poles with rags, or causeways, or embankments, inclosing certain portions of barely cleared marsh, were now finished, solid ground filled in in many spots, and blocks of houses had been erected. The river-lines had been completed in stone, good roads formed, and several substantial and well-designed bridges spanned the stream at various points. In spite, however, of these improvements, due to the energetic mind of Mr. Bonham, the former Governor, and who was deservedly a great favourite with all classes, the place itself had lost much of its interest, as well as attractions. The present excellent Governor, Colonel Butterworth, was equally esteemed; but the changes which had necessarily occurred in the mercantile prosperity of the place, between the periods alluded to, had now materially diminished the society, as well as, by the transfer of much of the capital to Hong-Kong, the means of supporting the marked hospitality which we experienced at the former period. Singapore, as we now found it, deprived of its worthy Governor, absent at Penang, was dull indeed; even the bustle consequent upon the crowded anchorage, where European and Chinese craft seemed to shut out the town from the passing voyager, was now considerably changed. Very few Junks (in comparison to the date alluded to) now visit Singapore. The Chinese find it more convenient, as well as to their advantage, to exchange their cargoes at the nearer mart of Hong-Kong, and thus avoid the dangers of the China Sea. Still, dull as it was, commercially, it was hailed by our crew as a most acceptable change after our solitary cruize since quitting the lively scenes of Manila. As regarded excitement, or "Life", in the lower classes, the same din prevailed; offers of all kinds were eagerly pressed. Dubashes for supplies; others with cards for the hotels; dealers in marine stores, from a pot of jelly to a pot of blacking, anchor, or guns. Chinese tailors and shoe-makers using every artifice to attract, and willing to suit your fancy, even to following up minutely the defects or repairs which they may discover in former garments, which they invariably ask for as *muster* (or pattern). Upon either quarter of the vessel, may be noticed the Bengalese Bumboatmen, each twisting himself into all manner of *Salaams*, and coaxing motions, and into the most humble postures in order to ingratiate himself, and obtain a preference from the First Lieutenant, the *de facto* ruling power in port. Lying a little further out, may be noticed the more insinuating Indian juggler, equally humble in forms and attitudes, but not less eager in his vocation, asking almost by the changes of his countenance (colour excepted) permission to delight the crew by sleight of hand exhibitions, tricks with live snakes (Cobra de Capella), or, as expressed by one of the crew, "obtaining soundings in his throat," by an obtuse iron spit, which he is pleased to denominate a sword. The duties of refit over, liberty is granted, by watches, or portions of the crew, and now little does the prosperity of the place trouble the brain of the mischief-loving tar. Being duly togged out for the shore, in his best white trousers, and neatly worked shirt, set off by a flowing Barcelona, and natty straw hat, with a length of black streaming ribbon, or pendant, which designates him a *bonâ fide* man-of-war's man, he steps upon the gangway, eyeing the boatmen pressing around for fares. Jack's mind is soon made up, but he likes to tantalize them. Like the railway traveller, little does he dream of security, it must be *express* with him also. The lightest and fastest are the *tàmbangs*, which are very elegant little canoes, generally impelled by two, or four, lank, but clean-built, and powerful Malays. These urge their claims for preference, exclaiming, "Two man boat, Sar?" "Four man boat, Sar?" or, "Pull like debbel, Sar!" This last is sure to fix the taste, and one or two of our heroes may be seen with the leg stretched out, with all imaginable importance, bounding over the glassy wave, until he is landed in the creek, for Jack does not admire shooting his craft on the beach, anywhere in the vicinity of the men-of-war's boats. Very shortly after landing, it is evident that some ship's crew is on liberty; horses are seen in rapid motion, some without riders, riders without hats, but all bearing a decided disposition for fun, except the nags, which rather seem to eye between fear and astonishment the larkish bipeds, who *rig* and *unrig* them according to their notions, and from whom they would probably bolt if further from the town. Others, of the more sober cast, will be found grouped together in one horse Palanquins, but which, upon close examination, will be found plentifully stored with what Jack terms his needful ballast, that bane of English seamen, spirits.

It is strange, that in the present advanced state of general improvement amongst our seamen, this old relic of the war pranks still maintains its force. We do not notice it amongst the French, Dutch, Spanish, or Americans, although in this latter service many of their seamen are English. Nor does any influence of Captain or Officers seem to change the disposition. In many cases which I have noticed, there will be found a *shore* companion, picked up at one of the houses where seamen resort, whose business, doubtless, it is, to favour this propensity, possibly to propose it, for his own enjoyment in the first instance, and the interest of the house-keeper, in the second. A seaman once in the power of one of these wretches, is seldom permitted to recover his senses until he is thoroughly fleeced; when, probably, his term of leave far expired, he becomes an absentee, and is then, from fear of punishment, seduced to desert; even if returned to the ship by the police, his tale is not listened to, and he becomes a marked man. This was not the case in the 'Samarang', but it has grieved me sorely to have occasion to root out some of my men, whose conduct, generally, on board, deserved my approbation, from some of these dens, and to be compelled to charge against their pay the sums due for their apprehension.*

The town of Singapore may be considered as separated into three distinct divisions. The western, Chinese; central, English; and eastern, Malay (or Kling, Chinese, and Malay). The western, is separated by the stream, and although it contains the counting-houses and stores of the English merchants, still their private habitations are mostly in the central division. The Chinese principally occupy, and reside in, the western division, and here may be procured any article desired, either from Europe, India, or China. Any article of which *a pattern* can be produced, will be imitated by the Chinese. Nothing is considered by them beyond their capacity, they will make the effort, and in general succeed in a marvellous manner. Care, however, must be taken, to point out any defects, or they will most assuredly be copied.

* Apprehension must be paid for, and the pay of the seamen stopped, 1*l*. straggling, and 3*l*. desertion.

The central portion of the town is entirely set apart for public offices, church, official and private residences, and hotels, reserving ample space between the sea and the houses for parade, and carriage drives, which, in 1840, was generally well attended, between the hours of five and seven. On the east, are the shops of the Klings and Malays. This part of Singapore has been very much improved of late, and several excellent bridges now render the villages, on the opposite side of the stream, more accessible, having rescued them, in a considerable degree, from the filthy condition, which formerly prevailed there. The eye is naturally attracted to the general fabrication of arms in this region, and to those conversant in the examination of the Pirate boats of these seas, the question naturally suggests itself: Are these swords, parangs, knives, muskets, bell-mouthed blunderbusses, &c., intended for Pirates? There cannot be the slightest hesitation in the reply: They are; and the Pirate, "emissary prahu," her Nakoda and crew, are gazing on you, dressed in gaudy attire, and only await their chance of evading the gun boats, to rejoin their associates, with fresh supplies of arms and ammunition. The question then arises: How many gun, or guard, boats watch this illicit trade? I wish I could safely say *one*; I may say *one occasionally*. A very simple *rûse* will call for her presence westerly, or easterly, as the case may be, and these supplies pass unheeded. So long as we continue to furnish the means, so long may we expect Piracy to continue. Cut off these supplies, these *sinews*, and it will receive its heaviest blow.

The utter want of defence against the smallest cruizer, which an enemy might send to levy contributions on Singapore, or to capture the merchantmen laden with most valuable cargoes, has, at length, excited attention, and plans and estimates have, I believe, been forwarded to the proper department, at the India house, there to remain and be debated upon; during which delay, this place may be wrested from us by the first state which may happen to make war. It is a matter worthy of the serious interference of our Government. Is it a procrastination in order to avoid the present expence, which will fall eventually, when the colony does, upon the British Government; and is the valuable property now stored there, to be thus risked? These are important questions, which, I trust, may speedily receive satisfactory attention. The question where the lighthouse (to be termed the Horsburgh Testimonial) should be placed, was mooted so far back as July, 1844, by a letter from the Governor requesting my opinion. I was subsequently informed that my suggestion of placing it upon the Romania Islands, had been approved by the proper authorities, and the necessary instructions to furnish estimates, had been issued. By reference to a small pamphlet, by Mr. Alex. Gordon, Civil Engineer, relative to lighthouses constructed of iron, I find it there stated, "that the estimated expense, by the Superintending Engineer at Singapore, for the masonry alone, amounted to 15,000*l.*, whereas, one of iron could be delivered, and erected at Singapore, at the cost of 3,000*l.*; yet by a late notice in one of the Singapore papers, the *probable* erection of a lighthouse on Pedra Branca is alluded to."

The attention of Government has been "from time to time", commencing, I believe, as far back as the year

1829, turned towards the occupation of *Pulo Brani,*[*] or Gage Island, as a naval or coal depôt, and as my opinion was, on this occasion, invited, I shall here insert it.

With regard to New Harbour, and the proposed site for a coal depôt on Pulo Brani (or Gage Island) I would most strenuously advise, under *any* circumstances, *peace* or *war*, adopting that position for coaling both the naval as well as packet service. I look beyond the *mere position* and facilities for *coaling.* I view it as a *stride,* not only to the opening, but also to the free navigation, of that channel, and, ultimately, to the *probable* formation of a new town and port for Singapore. In the event of distress, this position affords refuge; secure facilities for grounding, or repairing defects, in many cases, without lightening, either to naval or merchant shipping.

In order to secure this, it will be necessary to *form* a large area of level ground, for the purpose of landing stores, housing crews, &c. Should any serious accident occur to any of our larger ships, in no other position could she be accommodated, and what is also very important, no other site could be selected so well adapted to ensure the preservation of discipline, if compelled to land the crew.

Upon a cursory examination of the chart of this channel (constructed by Mr. Thompson, in 1842) I observe, "that a *safe* and *short* channel would be available by night or day, provided a light is established on the hill above 'the Malay village'. That leading mark, seen clear of the point of Blakan Mati, would bring a steamer from the fairway fork (to either channel) into New Harbour, by a *direct course* of *twelve* miles."

[*] Literally Loadstone Island.

The mails could be landed at "the Malay village", and would reach the post-office in less time than a gig from the sea anchorage. The distance, by the channel now in use would be twenty miles! and without guide of any description.

Coming from the eastward, the proposed light would lead a vessel, under very mediocre pilotage, into New Harbour, a torch at the buoy (by previous signal from the steamer) leading her to *moorings*. This same light, screened by Tanjong Batu, would, independent of that suggested on Romania Island, lead vessels moving easterly, or westerly, clear of the Johore bank, and ensure their reaching the roads safely at night, instead of anchoring, and losing breeze until daylight.

On the 14th the 'Agincourt', with the Admiral, anchored, and on the 18th, the affairs of Borneo not requiring our detention, we took leave of Singapore, Lieut. Ogle, of the 'Royalist' joining the 'Samarang', and that vessel being returned for the service of the station. Our course down the China Sea was free from any remarkable incident, until the 27th, when being much baffled by variable winds and currents we stood over under the Island of Billiton, in the hope of avoiding some portion of the current. On the morning of the 28th, being close under Billiton, we found the current still driving us fast to leeward, and having passed close to an island not placed in the charts, anchored near it to avoid change of tide, and obtain Observations for securing its position. These were completed before the evening, and on embarking, as I still found the current strong, orders were given to weigh about midnight, our greatest advantage being gained by night, when the breeze is usually stronger, and favours, by blowing off shore. Immediately after weighing, and directing her to be steered N.E., that being the opposite course to that by which she entered, she struck, and remained fixed. All efforts to move her that night were ineffectual, but as I well knew that force must yield to stratagem, I let her lie quietly in the bed she had settled in, until daylight, when we found her completely hampered in every direction by rocks, rising in many spots nearly to the water's edge, any exertion of force would have injured her. How she could have reached this position, unseen during the day, and in so short a period, was incomprehensible. Yet there she was, and our attention had now to be directed to discover where she entered, and how she was to be extricated. My thoughts instantly reverted to the wreck of H.M.S. 'Alceste' but a few miles from this spot. But we were more fortunate, not only had we a better bed, but a very convenient little island within musket shot, and no chance of losing any article of provision or ammunition. The very transparency of the water, and the perfect clearness with which every object was visible, was, in itself, delusive, furnishing no guide to the depth, which was only to be discovered by probing with a pole. By 4 o'clock that evening, the necessary arrangements were made. The guns were put into the remaining barge (one barge and two gigs, with other stores, being left behind at Singapore for the squadron) and the spare chain cables paid overboard. It was originally intended to land the guns upon the steep part of the reef projecting from the island, and to recover them when afloat. Fortunately, this was found to be attended with difficulty, and deferred until we tried what could be done by our first heave. This she obeyed, and before six was riding safely in six fathoms, and guns re-embarked, the depths between our bows and anchors varying from seven to eleven fathoms. Our misfortunes were not ended, a breeze came on, the anchor came home, the hawsers stretched, and she again grounded abaft the main mast, and in spite of all our efforts hung, striking heavily and in a manner, most distressing to all on board. About midnight she ceased to strike, having settled on the reef. Dawn found us again at work; the guns were slung to the breeching hawser, at distances admitting of heaving each up separately, and having ascertained that there was deep water on the outer side of the reef, on our starboard bilge, the guns were safely *deposited, in order for recovery,* on this reef. Other measures being then adopted for heaving off, she was again hove out in deep water, at 2, P.M., the anchors dropped afresh, and the ship being veered alongside the reef, with steadying hawsers to keep her clear, the guns were re-embarked, and the ship in a condition to move before sunset. In order to avoid farther possibility of misfortune, warps were laid out at long ranges, and the ship cautiously moved beyond her cable strain, before lifting an anchor from its hold, and one kept barely atrip, during the process of warping. Having gained a fair distance, and the sounding boats assuring us of an escape, sail was rapidly made, and we soon took leave of this unpleasant region, deeming ourselves most fortunate in making our escape. After such toils, all hands were much fatigued, and considering ourselves perfectly beyond further danger, were asleep, save the watch and the ship, moving gaily to the N.E., in twenty fathoms, at the rate of seven knots. About half an hour after midnight, a crash, which awakened even those most fatigued, gave warning that we were again in disaster. All hands were on deck in an instant, but in the existing darkness no one knew where the danger lay. The sails were flapping, but the ship was still afloat; throwing all back, she flew astern nearly as fast as she had gone ahead, and allowing her to continue at this play, until the wind filled the head sails, the yards were braced forward, and her head directed to the N.W., when having recovered soundings of twenty fathoms she was anchored for the night. At daylight she was found to be N. 20 E., seven miles from our former danger.

The island near which we struck, received the name of Pigeon Island, its northern extremity is situated in 2° 37′ 20″ S., Long. 108° 18′ E. The ship did not sustain any damage, that we could discover, nor did she lose any stores in the course of these disasters. During the interval of the two groundings, to the period of being at secure anchorage, twenty-two hours elapsed. All the spars were turned overboard, and rafted; seven guns twice turned out, and recovered, and ship otherwise put into confusion. At the thirtieth hour, the ship was in a condition to move, and ready for any service. I never saw a ship's company behave better, nor did they appear to feel the exertion beyond that of an ordinary "hard day's work." These incidents serve to instruct the junior officers, and put them upon their resources, but we had enough of these matters, and began to look forward with more anxiety to restoring her to her old moorings in Portsmouth Harbour. The entire region about the Carimata Channel requires a searching investigation ; on both sides we had reason to doubt the accuracy of the existing charts, passing over shoals, and noticing sand banks not exhibited on the charts.

Having worked through this channel, we found ourselves, on the morning of the 8th of July, near Pulo Baby, the wind fair, but weather very thick, and noticing a ship at anchor waiting for finer weather, we followed her example. Here we caught a glimpse of the land, weighed the following morning, and keeping the Java coast aboard, ran for the Strait. About 4, P.M., noticing strong ripples off one of the points, the anchor was let go, in seven fathoms, on a rocky ledge not laid down. The impetus of the ship, added to a current of 3¾ knots, tried the strength of anchor * and cable. During our detention here, we examined the neighbourhood of the Button Rock, for a shoal off the western side. We found it to have as little as 2¾ fathoms, but the rapidity of the current probably prevented the lead from showing less; nevertheless, it was pretty well probed by oars at twelve feet, without finding rock. Weighing from this position, we dropped down to Anjer, where we anchored that evening. On paying my respects to the Governor, he tendered every possible civility, and as I was far from well, he wished me to take up my quarters on shore. The shortness of our stay rendering this scarcely worth the trouble, he most kindly directed milk, and other

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* One of Porter's 30 cwt., it was *bent* by this extraordinary strain, but not injured.

comforts, to be sent daily. A short ramble into the country immediately within the town, enabled me to observe the gardens and farms of the inhabitants, which differ little from those in the neighbourhood of Singapore, the cultivation in general being conducted by a race partaking, apparently, of the Malay and Chinese. The garden produce of the immediate neighbourhood is chiefly intended for the supply of passing vessels, with which they generally drive a very lucrative trade. Their supplies consist chiefly of ducks, fowls, geese, and tropical vegetables. These boats will frequently quit Anjer, and seek a vessel observed in the offing, holding on by her until she either anchors in the roadstead, or passes by. A very fair landing-place has been constructed by running out parallel walls into nine feet water, but still frequent rollers cut off all communication, and at the most quiet moments, care must be observed in evading some of the small curling seas which *top* at the very moment you fancy yourself safe within the walls, dashing the boat against the inner wall, where you may be left grounded on a ledge of rock, until another *friendly* wave removes you beyond.

The Governor, or Resident, having officially requested an opinion as to the most eligible site for a Lighthouse, the following reply was sent.

H.M.S. 'Samarang', Anjer, July, 1846.

Sir,

In reply to your letter relative to the position for a Lighthouse at Anjer, I regret that my slight knowledge of the Straits of Sunda should render me hardly competent to deal as freely with the subject as its importance demands.

My opinion, however, rests upon two decided positions, viz., the Cap Island, and the Fourth Point. I do not think the light would be *convenient* if placed within these objects—such as in the bay, where the bamboo erection now is.

I prefer Cap Island: First; because it would be a safe object to steer for, coming round Pulo Merak, and avoid Brewer's Shoal: Secondly; that coming from the southward, it would lead clear of the Fourth Point danger. Vessels passing to eastward of Thwart-the-way at night, would feel confident of being safe from the Stroom Rock, when that light opened.

Should the light be placed on the Fourth Point, it would also lead clear of the Stroom Rock. But vessels passing the light would have to *estimate* their distance for clearing its reefs. Whereas the Cap may be passed on either side without danger.

I have examined the Cap Rock, and find, that by clearing off twenty feet of its surface, material would be found adapted to form a good masonry platform, on which any structure for a Lighthouse would find a sufficiently stable foundation.

I am, &c., &c.,

The Resident, Anjer. EDWARD BELCHER.

Having completed water and supplies, we took our departure from Anjer on the evening of the 16th of July, shaping our course for the Cocos, or Keeling Islands, where we anchored on the afternoon of the 23rd. Our sole object here was to obtain Magnetic and Astronomical Observations, the latter for connecting it with the Cargados Garajos. Capt. Ross, the Resident, was absent at Batavia, we were, however, visited by some of his establishment, and after the duties of the day were over, paid a visit to the settlement.

The Keeling Islands, properly so named, appear to have been discovered in 1608, by Capt. William Keeling, employed in the service of the East India Company, amongst the Molucca, or Spice Islands. It was on his return from this service that these islands were discovered by him. In 1823, Alexander Hare, an Englishman, whose pursuits bear a very doubtful character, took possession of the southern Keeling Island, bringing with him an establishment of Malays, including a seraglio. In 1826 Mr. J. C. Ross, formerly master of a merchant ship, settled on one of the eastern group, and finding Hare's Malays in the condition of slaves, countenanced their desertion of his interests; their complaint against Hare being that they were deprived of their women, whom Hare secluded on a separate island, to which they were denied access. Hare then resigned to Ross, and quitted the islands. Since that period affairs appear to have gone on smoothly, the Malays catching fish, turtle, and rearing pigs and poultry for the consumption of those vessels which may touch at these islands. I certainly expected to find the residence of Capt. Ross, after a lapse of twenty years, in a decent condition. It presented, however, little more than such a house as would rapidly be raised from the timber saved from a wrecked vessel, and gloomy beyond conception, being completely overshadowed by cocoa-nut trees, and, as a natural result, swarming with mosquitoes. The Malay village was infinitely more inviting. Here we noticed a very rude mill, in which they were grinding the cocoa-nuts for oil, and in every direction groups of turtle lately captured. Some of these were purchased, but the price, considering the profusion, was rather high. As the Malays did not venture off to the ship to sell their commodities, I suspect that the general produce passes through the hands of Ross's family. The western tongue of Direction Island is situated in Lat. 10° 5′ 31″ S., Long. 96° 54′ 0″ E., Var. 1° 23′ W., Dip. — 38° 55′.

On the evening of the 24th we took our departure for Mauritius, or rather, to search for the Brandon Rocks, reported to have been seen about two degrees to the eastward of the Cargados Garajos, and in the parallel of its centre. With a fine brisk trade we rapidly decreased our distance, at an average of 198 miles per diem, 230 being our longest run. As the 'Samarang' has always been classed as one of the slowest ships, and her previous Captain allowed that she was known to go eleven knots in a Ty-foong, when she lost her topmasts, it will be apparent, that with all her mishaps, she improved in her old age. By a standing regulation of the ship, the officers of the watches inserted the greatest velocity during their watch, stating the canvas under which the ship was at the time. If this regulation were adopted in all ships, we should have a series of *facts* to determine a vessel's sailing qualities, instead of trusting to the opinions and recollections of those who have to draw them up "when the document is required." By the record before me, I perceive that the 'Samarang' was under single reefed topsails, royals, port lower, topmast, and topgallant studding-sails, velocity eleven; under this canvas the studding-sails were taken in, and the ship rounded to, to sound. My nautical readers will therefore understand, that she had not too much canvas to show her cheek to the breeze. On the day following, is recorded, "Ship under double-reefed top-sails, and topgallant-sails, close hauled, 10. 6 (carrying sail to clear reefs to leeward). I observe that courses have been omitted; they were set. Now if this be one of the defective ships, what would the new class be doing? The late Admiral Hayes, one of the best seamen, and probably the best builder that we had, observed to me on taking the command of the 'Etna', in 1830, "My dear sir, never mind her mould; you can get the best out of a washing-tub, and no more; I will tell you what that ship can do; 10 off the wind, 8. 6 close hauled." He was correct; nor could we effect more in the 'Sulphur' with similar lines and tonnage. A great deal may be said, and written, about the qualities of different ships, but I perfectly coincide with the opinion of Admiral Hayes, that where vessels differ but *slightly* in their *forms* they may easily be made *sea-worthy*, and their best sailing elicited, either by the placing, or raking, of the masts, ballast, or general stowage. So much did he reckon upon this assertion, that he offered to take the losing ship where their capabilities at all approached anything like equality, and make her hold her own, or conquer her opponent.

On the 5th of August, under strong breezes, and with an unpleasant sea, we entered upon the limits assigned to St. Brandon's Shoals, varying, by different authorities, between 120 and 150 miles easterly from the main body of the Cargados Garajos. Officers aloft, and the look-out men at the mast-heads were unable to trace any appearance of reefs, or discoloured water, nor were we able to obtain soundings with 150 fathoms, in the space between us and the Cargados.

Our visit to this region, in order to examine this group was directed in consequence of the wreck of the ship 'Letitia', which had run upon Frigate Island, owing to its being erroneously placed on Horsburgh's chart (about thirty miles too far easterly) although his directory gave a longitude nearly approaching to the truth. The 'Tennasserim' steamer, belonging to the East India Company, had been directed to visit the Cargados Garajos in search of the crew, which she found were taken to the Mauritius. The communication of these facts, through the Government of Ceylon, where the 'Tennasserim' had reported herself, caused this enquiry to be made at the instance of the Home Government.

The Cargados Garajos consist of a coral semilunar bed, extending in the direction of its western horns, about N.N.E. twenty miles, and perpendicular from this chord, curving easterly about nine miles. Off this patch lie five detached islets, named by the latest surveyors, under Capt. W. Owen, Albatross Island, North Island, Siren Island, Pearl Island, and Frigate Island. The whole of these are included upon a general bank of coral sand, which has from thirty to thirty-three fathoms as its outer limit; the eastern soundings being almost on the face of the reef, very steep to, and decreasing suddenly from thirty fathoms to five: so that even in the finest weather, with a smooth sea, that side of the island should be cautiously approached, or, more correctly, entirely avoided.

Upon the main coral patch are situated the three islets Etablissement, L'Avocaré and Coco, which latter is upon the extreme south. It is possible that these patches were formerly connected by sand banks, or fine coral debris, but the sea appears to have cut channels between them, at the present day, and even to have separated the great patch into two, admitting of a passage carrying three and a half fathoms at the shoalest point.

This group is supposed to be a continuation, by deep water soundings, with the Saya de Malha (or Coat of Mail) bank, also very dangerous, and which, by the frequent reports of recent navigators, appears to merit a closer examination, and to be more correctly inserted upon the charts. The name of this latter danger is satisfactorily traced to be of Spanish derivation, but of Cargados Garajos we have no clue. The term Rocks of St. Brandon has been applied by the French, and this has probably given rise to the reports of the Brandon Rocks having been lately seen, as in reply to questions as to the existence of the St. Brandon rocks at Mauritius, the reply would certainly be in the affirmative, understanding the question to apply to the Cargados Garajos.

But to proceed with our examination. The prevailing strong breezes, or rather gales, which prevailed, rendered any attempts at working to windward, in order to search for any banks which might extend easterly, towards the reported, or suspected, rocks of St. Brandon, if not impossible, at least impolitic. The very question of the accurate meridian distance between the Keelings, this group and Mauritius, would materially depend upon the rates of our Chronometers, and those could not be relied on if the ship attempted working through heavy seas under close-reefed top-sails. Even under the lee of the islands, in comparatively smooth water, this was unpleasant.

At noon on the 6th we rounded the extreme of the coral belt extending off the southern islet, called Coco Island, which derives its name from having been formerly covered with these trees, but of which only two in a perishing state remain, almost in derision of the appellation. On the eastern edge of the breakers still remains the hull of a vessel entire, with her bow-sprit standing, and anchors on the reef, showing that though the waves of this region are too powerful to admit of extricating a vessel which may strike on that side, still they do not rise sufficiently high to injure her when once set in upon the reef. We subsequently learned that the vessel had been wrecked at this spot more than fifteen years since.

Immediately after we hauled up under the lee of the islets and sand-banks, our attention was directed to secure *terra firma,* or some sheltered spot for our observations. We soon noticed a schooner anchored, well to the eastward, and, by reference to our charts, within the portion of sand, dry at low water, at least four miles! As we met with no difficulty beyond coral knolls, easily avoided by a sharp look out from aloft, we continued plying to windward, until 4 o'clock, when the 'Samarang' was anchored *four miles within* the limit of this *ci devant* sand-bank, in three-and-a-half fathoms, close to the schooner, which proved to be a fishing vessel from Mauritius. There is no sand-bank, therefore, and its insertion in the charts is highly dangerous. Such an error * in the delineation of these dangers, sufficiently intricate in themselves, is injudicious, as a vessel, finding herself within the reefs, might, after slight damage upon some of the knolls by night, escape, and to prevent further injury, or loss, endeavour to *beach* upon the supposed sandy flats, which, although *apparent* on the southern portions of the island, are nowhere to be hit, being invariably barred, at some distance, by girdles of coral, generally very "steep to."

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* *Possibly* intended for sand occasionally covered by water.

The island off which we anchored, was called *Avocaré*, and is at present the principal fishing station; the resident fishermen consisting of fourteen coloured people of Mauritius, and a head man, a half-caste of Seychelles; the whole establishment, including the schooner, belonging to Mr. Chelin of Seychelles, now of Mauritius, who formerly conducted the business in person. They were hutted in the most miserable style upon the island, and started daily in the morning in two whale boats, with hooks and lines, returning at about 4 o'clock in the afternoon, with about an average take of forty to fifty fish per man, weighing, when cleaned, about 2 cwt.

Another small islet, called *Verronge*, is situated about five miles southerly, where they have a hut for temporary refuge, and *Etablissement*, the northern Cocoa-nut Island, which formerly possessed a respectable residence, completes their haunts upon this group. When the schooner has taken on board the fish which is cured, she starts for Mauritius, leaving the fourteen and Captain of them behind, to complete fresh stock by the period of her return. Our crew very soon tried their luck at fishing, and during our stay they feasted as long as they could obtain facility for cooking in the galley, which was incessantly crowded by more cooks than our establishment warranted.*

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* Fortunately the wreck of the 'Letitia' furnished them with adequate fuel, or this indulgence might, from necessity, have been cramped.

We were fortunate in having selected this spot, as strong breezes and unpleasant weather immediately followed; taking advantage of a favourable lull we ran to leeward, to Frigate Island, where the wreck of the 'Letitia' still remained. We succeeded in effecting a landing, and in erecting tents, to secure this as a principal position, but so powerful was the breeze, and so much did the surf aid it in causing the island to vibrate, that at this period I was unable to obtain any satisfactory observations. We here noticed the remains of the huts of the crew, and the grave of the Captain, who was drowned in the attempt to recover money or goods from the vessel. The whole island is perforated by rats and marine birds, particularly a large species of sooty *Procellaria,* which burrows under the light sand, loosely covered by a network of a species of Samphire. Tern of four kinds were very numerous, one small and of a beautiful silvery hue, and some thousands of their eggs collected by the party left in charge of the tents, were distributed to the crew, and were nearly equal in flavour to those of the Plover.

We then visited *Etablissement,* where we found fair landing, and succeeded in obtaining satisfactory observations; subsequently, I made an attempt on the lee side of North Island, which stands clear off the main group, and is exposed to the full eastern sea. Here we very narrowly escaped the loss of gig, as well as instruments, but by the spirited conduct of her crew, she was extricated, at the very moment when I feared she was beyond the chance of rescue.

Albatross Island, the northernmost of the group, was then approached, under its lee, but no possibility offered of landing without greater danger, we therefore bore away to make another attempt on Frigate Island, and to withdraw our party, a service not easily effected.

Ultimately, we obtained excellent observations on Coco Island, and having collected a number of young Coco plants at the Keelings, for the purpose of transferring a better plant here, we left at Frigate,* and this latter station, two plantations, the fruit of which will, I trust, if not destroyed by the fishermen, prove of value to any poor creature who may meet with misfortune at these spots. Formerly these fruit trees abounded sufficiently to support the inhabitants, and furnish oil, but gales, added to the desire of gain, and the uncontrolled appetites of the blacks, have destroyed the trees for the sake of their cabbage, or head shoots. These trees are not so readily reared as imagined; it is always attended with risk and great care. It is so throughout the Pacific, and all persons who form plantations, free from exposure to strong sea winds, are well aware of this difficulty. So it proved with these islets; the instant they began to thin, to lose their mutual support, and the breeze to play strongly through them, so soon did they fail, and those which now remain, inclined at a large angle from the prevailing breeze, seem almost to quail under it.

These are among the facts against the formation of islands in the present day. My experience has taught me that all coral islands are decreasing, and the sea cutting channels through them. May not this be assumed at this group? By the survey, by the late Capt. Mudge, under Capt. Owen, in 1825, unnoticed by Horsburgh, in 1841, the sand-banks alluded to may have been above water, we have many instances of greater alterations; and viewing the decided changes recorded, and visible, here, I have strong suspicions that this talented officer was correct; but that the sea has cut its way through, even to severing the main island in two, and leaving a channel through which the 'Samarang' could pass.

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* As fresh water was found at Frigate Island they will probably thrive, as I planted them in the hollow, protected for some years from the breeze.

Every inquiry was made of the Captain of the resident fishermen as to the existence of St. Brandon's Rocks. He derisively exclaimed, "Oh yes; these are the rocks of St. Brandon; every *white stone* you notice above water is termed a St. Brandon." This Captain, or principal, (a French half-caste of Seychelles) assured me, that he has navigated these seas for the last twenty-six years, and in the fine season has been much employed seeking the hawk's-bill turtle (in the schooner) to windward, beyond the limits I mentioned, and that no shoal was ever seen or believed by them to exist in that direction. I have little doubt, therefore, that the report of their existence originated in the customary habit of these fishermen, on their visits to Mauritius, of alluding to the Cargados, under the appellation, which they invariably use, of St. Brandon.

Water fit to drink we were not able to procure; I tasted some on L'Avocaré, but it was brackish. The fishermen stated that they obtained their supply from Coco Island; we dug in vain, but were afterwards informed that it was on the Sand Island (comminuted coral) immediately to the northward of Coco Island.

The position of Coco Island was determined to be in Lat. 16° 48′ 50″ S., Long. 59° 31′ 48″ E., Dip. — 50° 11′. Var. 7° 54′ 12″ W.

Our duties having been completed, we were heartily rejoiced at taking leave of this very uninteresting group. Our detention here had been attended with most harassing duties, crew constantly wet, landing on the detached islands difficult, as well as hazardous, and nothing but being close under the lee prevented our being constantly under close-reefed top-sails, and experiencing very unpleasant weather.

As the great object at present was to perfect our Meridian distance, all sail was carried to reach the Mauritius, which we made on the 24th, and running between the Gunner's Quoin and the northern point of the island, soon sighted the Flag of Rear Admiral Dacres (the Commander-in-Chief at the Cape station) flying on board H.M.S. 'President'. Our number made, and permission requested to enter the harbour, the steamer shortly took us in tow, and by 5 o'clock, we were safely moored within the 'President', with the 'Snake', Captain Brown, on our beam.

CHAPTER XV.

MAURITIUS TO ENGLAND.

Leave Mauritius—Pass Island of Bourbon—Cape of Good Hope—Simon's Bay—Illness of Lieut. Roberton—Left at sick quarters—Re-survey of Table Bay—Proposed construction of a Breakwater—St. Helena—Terrific consequences of the rollers—Ascension Island—Excitement on nearing home—Violent Gale—Narrow escape of the ship—Reach Spithead—Ordered to Chatham—Paid off—Conclusion.

BEING detained at the Mauritius, principally for the purpose of rating our Chronometers, we had more leisure time than we usually enjoyed in port, and between the hospitality of the Governor, Sir W. Gomm, of Admiral Dacres, and our military friends, we enjoyed our visit extremely. As this island has been fully described by former voyagers, and my pursuits did not lead me into the interior, I pass over this spot without any further allusion.

On the 3rd Sept. we sailed out of the Mauritius, shaping our course past the Island of Bourbon, for the southern coast of Africa. Nothing worthy of note occurred until the 17th, when we made the African coast, and ran into soundings in the neighbourhood of the Great Fish River, when we shaped our course alongshore, for Cape Agulhas, (literally needles, in the Spanish language, but corrupted by seamen into Lagullas). We noticed several vessels lying at anchor off Port Elizabeth, and made our number to one, by the aid of Marryat's Code. We were not at the time aware of the vicinity of the Governor and troops to this place, or our course would have been directed nearer to the shore, and a communication effected. We were able, however, to discover that our inside friends were not in enviable berths, as they were then (nearly calm in shore), rolling most unpleasantly.

At dawn on the morning of the 21st, we found ourselves becalmed off Cape Agulhas, and being in soundings the first Lieut. apprized me that I had a chance for fish. I immediately went on deck, and, with my usual luck, in two hours hooked forty-two fine fish, varying from six to thirty-six pounds. A very curious fact was here discovered which saved me a very great portion of fatigue. I think that we were at the time in thirty fathoms. This was a long pull (although I had two of my boats crew ready for the heavy work) but immediately after taking the first fish, I found that the lead ceased to descend, as fast as it should do, at five fathoms, and, upon trying the line, found that the shoal of fish which swarmed at that depth were too voracious to permit of its passing below to their brethren beneath. These, and a few others, taken by those around me, afforded a fresh meal to the whole crew. Vessels homeward bound, generally manage to touch upon the tail of this bank; as I have taken fish at seventy-six fathoms on it, many a poor fellow who may be fretting at his hard fate at being becalmed, may divert his chagrin by treating himself, not only to the sport of capture, but also to the gratification of a treat, quite equal to Billingsgate, and more enjoyable, possibly, for the *seventy-six fathom exercise* which it provided. On the night of the 22nd we passed Cape Hanglip, but mistaking the force of the current, and the master mistaking the land, we had over-shot our mark; and on the morning following, when we thought ourselves in a position to run with a flowing sheet into Simon's Bay, had the mortification to discover that we had rounded the Cape during the night, and the breeze having failed, were being swept away by the current to the N.W. Fortunately, we managed to beat back that night, and on the morning of the 23rd re-passed the Cape, and dropped our anchor about 5, P.M., in Simon's Bay.

Here I found Capt. Kelly in H.M.S. 'Conway', and Commander Radcliffe, of the 'Apollo', troop ship, the latter vessel had just returned from Port Elizabeth, on the eastern coast, where she had narrowly escaped shipwreck; having parted her cables, and by sheer dint of good sailing, as well as seamanship, gained her offing, and returned to this port. The period of our stay was employed in the examination of Simon's Bay, and construction of its chart. During the interval which had elapsed since our quitting this port in 1843, and the present, a Light-vessel had been established off the Roman Rocks. To her position, and the general fitness of the vessel for this service, my attention was directed. Owing to insufficiency of beam she was not able to display her light at her mast-head, in any weather which could be termed fresh. It was therefore lowered half mast. In a gale it could not be shown above the deck. It must, therefore, be apparent, to my readers, that the publication to the nautical world "that a light was exhibited thirty-seven feet above the level of the sea," was not correct, and that at the two most important moments, when the value was required, any judge of distance would be led astray by the untrue height at which the light was displayed. At the moment of my visiting the vessel the motion was very unpleasant, and, although calm, the grating of the moorings over the rocks was so alarming, I can hardly imagine that her crew could possibly obtain rest in blowing weather. Hovever, custom inures us to worse than this, I have witnessed that fatigue will allow of a sound sleep on a *pile of shot*, with twenty-four pounders smartly discharged, and recoiling within a few feet of the *dozer*. But this was not all: the bights of these moorings frequently caught under the rocks, and unless they yielded, endangered swamping, and loss of all on board. I was informed, that twice since her being placed, her moorings (sufficiently strong for a frigate, and now adapted to a vessel about 100 tons) had been replaced, in consequence of injury from chafing over the rocks.

I cannot, therefore, take leave of this subject without the following observations. I think, that in all cases where *light-vessels* are intended to be placed, a very severe scrutiny should precede their adoption; not simply as to the mere requirements of the port, but also to the most serious consequences which its partial, or total, failure may entail; not only upon our own ships of war and merchantmen, but also upon those of foreigners, who upon reading the official notification that a light is displayed at thirty-seven feet above the level of the sea, run boldly upon the calculation for distance resulting to that height, when truly, at the moment of danger, and when most imperatively called for, it is only twelve, and that, in all probability, partially obscured by the pitching of the vessel. The incapacity of the vessel, in the first instance, to sustain the lanthorn aloft in bad weather, is the first deceptive evil; the chance of breaking adrift, swamping, or destruction, the second.

Referring to the severe scrutiny I have suggested, I think, that before the adoption of any *floating light*, it should be imperative that *another*, adequate to supply her place, should be *ready*. The loss of any British vessel, by such a failure, would be loudly proclaimed, but the reflection, if such a misfortune befel a strange vessel of War, would be sensibly felt by our Government. It will naturally occur to the minds of most of my readers to inquire whether this vessel (and, as I have suggested, her duplicate) cannot, with all her expenses, be superseded by a lighthouse upon the Roman Rocks? I cannot safely reply in the affirmative, but I have been informed by Mr. A. Gordon, Civil Engineer, that if a base of twelve or thirteen feet rock can be secured, an iron lighthouse of seventy feet may be raised at a moderate expense; less, than the cost, wear and tear, of one vessel for five years. All these matters were much agitated during my visit, and as they were to be followed by an official representation from a higher quarter, I trust that the matter will receive the attention of Government.

On the 7th of October H.M.S 'Apollo', having on board invalids, &c., quitted for England, and as our operations in Simon's Bay were complete, the 'Samarang' was moved to Table Bay, there to await the arrival of Admiral Dacres and convey his final Despatches for England. Lieut. Roberton, whose name has frequently been noticed in this narrative, and who was my frequent associate on boat service, supplying the place of my lamented friend Lieut. Baugh, who had been sent home a year previously, was left behind at the Hospital at Simon's Bay with the purpose of following in some of the homeward-bound ships-of-war at a more favourable season of the year. His health, since our return from the Japanese cruize, continued to fail, and he was now so far reduced as to afford little prospect of his recovery. The pain of separating from all his associates was sensibly felt. As a gentleman, and friend, I valued him; as an Officer, he was exemplary; and, from his untiring zeal, his conduct at all times merited my confidence and entire approbation. I regret to say that the receipt of recent intelligence has confirmed our worst apprehensions; he died very shortly after our departure.

The present visit to Table Bay, although not affording the customary gaiety which the presence of the Governor and garrison generally entailed, was sufficiently pleasant amongst the personal friends I found remaining. Cape Town was, indeed, dull; the troops absent on the Frontier, and the military positions and barracks occupied by the Burgher force. My occupations, however, afforded me sufficient employment to prevent my feeling the change. The principal object of our visit to Table Bay was its re-survey, in consequence of the intended construction of a Break-water; and, although the measure, by the papers supplied to me, appeared to have already obtained the sanction of the Home Government, still it was imagined that some modification might be directed, not only as to its general lines, its connection, or otherwise, with the main, but also its adaptation to naval interests. The sum proposed had been estimated at 300,000*l.*, but as in all such matters, hitherto projected, we may safely assume, that its completion will not be covered by nearly a million.

In a mercantile point of view, the Break-water may possibly suffice for the number of merchant vessels which at present frequent the Bay, but if any such outlay is sanctioned by Her Majesty's Government, I think that something more than the mere accommodation of the merchant shipping should be embraced, and that as a positive increase of trade and shipping would naturally occur, it would invite an enemy to make this a most decided point of aggression; naval aid will therefore be required. As under the present lines adequate shelter is not easily obtained, it would be advisable to suspend operations until the best opinion of a Board of Naval and Military men, unconnected with local opinions, should report, not only upon the projected, or later, plans, but should also state their opinions as to the probability of a slaty foundation being adequate to the proper support of masonry. The Dutch tried it many years ago, and failed. If the experiment fails where it is now to be attempted, the present anchorage will be injured, if not ruined. The present defences of the bay are in no way calculated to protect works of such value, we may, therefore, add, to any outlay upon the sea, corresponding defences on shore.

With regard to the two lighthouses erected in Table

Bay, one stands upon Green Point, having two lanthorns, the other upon Monille Point, having one, of the fourth-class lenticular. As lighthouses, they may be useful, but when an expense of three lanthorns has been incurred, I should have been glad to have seen them so placed as to embrace every useful adaptation connected with pilotage. This has not been sufficiently studied, either in their positions or adaptation.

On the 21st of October, H.M.S. 'President' arrived at Simon's Bay, and having taken my leave of, and received the Despatches from, the Admiral, we quitted Table Bay on the 24th, for St. Helena. Immediately preceding our departure, the new Governor of St. Helena, Sir Patrick Stuart, appointed to succeed Colonel Trelawny, deceased, arrived in one of the Indian ships, and remained at the Cape awaiting the first convenient vessel that would touch at that island. After a favourable passage of sixteen days we sighted the island during the night of the 8th Nov., and about 5 A.M. on the 9th, dropped our anchor off James' Town. Here we found H. M. Brig 'Heroine', the French Troop Ship 'Oise', and several prizes captured by our African cruizers. Having completed water, we took our departure on the evening of the 10th, for Ascension.

Since calling in 1842 the Island had been visited by one of those dreadful scourges which are experienced generally in intertropical positions, but which have occurred as far south as Tristan d'Acunha. This is the Roller, which in a dead calm sets in upon the shore with incredible violence, swamping even vessels of war which may happen to be within its range. It has occurred, within my knowledge, at four different places: Tristan d'Acunha, St. Helena, Ascension, and Mazatlan in the Gulf of California. At Tristan d'Acunha H. M. Brig 'Julia' foundered with all on board; the Captain and his boat's crew, which were on shore at the moment, being the only persons saved. At St. Helena, the inshore slave prizes were the principal sufferers, but the garrison walls were undermined and thrown down, and the sea broke furiously over the ramparts into Government House. I am not aware of the damage done at Ascension.* At Mazatlan, situated on the Mexican side of the Gulf of California, this is of frequent occurrence, expected annually, and much dreaded by us in the 'Blossom' in 1827, and 'Sulphur' in 1839. One fine vessel, commanded by a friend of mine, with himself and crew was utterly destroyed in 1836, the receding wave leaving his vessel dry, and the returning dashing her to atoms. This is said to be averted by securely mooring head to seaward, by which measure others, it appears, escaped. It can only be compared to those Rollers which have, from time to time, been described as visiting places under influence of earthquake. Similar Rollers, on a small, and less dangerous, scale, have visited San Blas. Why it is so regular at Mazatlan, a little further north, is a problem worthy of consideration. Quitting St. Helena on the evening of the 10th, we reached Ascension shortly after dawn on the morning of Sunday the 15th, where we found H. M. S. 'Devastation', bearing the broad Pennant of Commodore Sir Charles Hotham, the 'Lily', 'Cacique', and 'Tortoise'. Ascension had experienced not only a very dry season, but, either from the exercise of great guns, or some other disturbing cause, there had also been a scarcity of turtle, consequently, we did not receive the customary supply. After paying my respects to the Commodore, and accompanying him to the Service at the Chapel, I returned to his quarters and remained until evening, when, having received his Despatches, we were again in motion about 10 P.M., for our final destination—England.

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* "St. Helena has ever boasted of the safety of its roadstead, and that most justly, as no individual upon the island can remember a solitary instance of a vessel having been wrecked upon its shores. Those who witnessed the scene presented on Tuesday, the 17th instant, alas! will have a different tale to tell. The roadstead, which only the day previous was like a mill pond, was a sea of troubled waters.

"During Monday night, the rollers for which St. Helena has ever been celebrated, the cause of which is altogether unaccounted for, began gradually to rise, and on Tuesday had increased to an awful height, like so many rolling mountains, one after another, driving every thing before them. The English schooner *Cornelia*, condemned at this port a short time since, and purchased by Mr. Cole, was the first vessel driven on shore. If the person in charge of this vessel had been left five minutes longer than he was on board, it would have been out of the power of human aid to have saved his life, as the vessel, some distance from the shore, was buried in the tremendous seas, and ultimately came in upon the beach: in a few minutes she was a mass of splinters."—*St. Helena Gazette.*

For full particulars of this disaster, in which thirteen vessels, and three men were lost, vide 'Nautical Magazine' for June, 1846.

Our passage homeward was not so rapid as we anticipated at this season, and on the 22nd of Dec., the 42nd day from quitting St. Helena, we had barely reached the limits of the great Bank of Soundings extending off the mouth of the English Channel, although our velocity precluded our getting bottom; and, with a fine westerly breeze springing up, were rapidly decreasing our distance from home. The temperature, which had now fallen to 54°, was sharply felt by men so long accustomed to tropical regions, where that of 76° was almost chilly, but possibly this feeling was much increased in my own mind, for I believe that I was the greatest sufferer.

Those who have made similar voyages, especially after an absence of nearly four years, can readily picture the anxiety of the greater part of my crew to reach England in time to participate in the festivities of the approaching Christmas. Many were the prophecies, and numerous the bets, as to the glad day on which we should reach home. Even the old ship herself seemed to share in this pleasurable excitement, and lightened of stores, provisions and water, was gaily bounding over the waves, increasing hourly her speed, until she had attained the velocity of eleven knots.

Little did any of us, however, dream that these cheerful anticipations of the evening were so nearly approaching to an awful crisis. I had previously given directions to be called before midnight, in order that sail might, if necessary, be reduced by both watches, and thus avoid the necessity of disturbing them during the night. She was then reduced to a close-reefed main-top-sail and foresail, and the watch called. Her velocity, I find, recorded under this canvas, ten knots. The watch were employed getting topgallant masts on deck, and making all snug aloft. I had not been below long, when I detected, by the motion, that she was badly steered. The foresail was taken in, and a fresh helmsman placed; her velocity had now increased to *thirteen* knots. The temperature fell, a short cross sea, evidently showing a contrary wind not far distant, made her very uneasy. Shortly after, a sea, with a crash which shivered the strong plate glass of my skylight, and greatly damaged it, as well as staving in several main deck ports, heeling the ship at the same moment heavily to starboard, and washing me in my cot, informed me that my presence was required on deck.

As I passed through my cabin door I found the ship flooded on the main deck, the water rushing down the hatchways, and "all hands", without the necessity for "the shrill pipe of the Boatswain", scrambling, or rushing wildly, up the hatchways, at this inclement season, almost in a state of nudity. Owing to the very spirited exertions of our able carpenter, Mr. Daw, aided by his crew, the hatchways were instantly battened down, and to the due preparation for this emergency (nightly at quarters) were we principally indebted for our preservation.

On reaching the deck, I found the Officers flying to their stations, many rather scantily clad for the winter season of the year in this region, and anxiously awaiting my instructions. At no moment of my life did I ever experience so truly, the inestimable value of a well-disciplined set of Officers and men, accustomed to danger. No symptom of fear, from the highest to the lowest, and cheerfulness, if such could be expected at such an awful moment, seemed to animate all around me. These are moments when an Officer can be fully repaid for all his anxieties, when he feels, that although he holds the scales of almost life or death to the hundreds under his command, they cheerfully look to his decision, confident that he will, *Deo volente*, bring them through their difficulties.

Flying through the water at a velocity of thirteen knots, steerage not only became difficult, but too hazardous to be continued; preservation depended upon our instantly 'rounding to,' a manœuvre of which my nautical brethren will instantly comprehend the danger, but with a main-top-sail over our heads, and the ship fluttering for her existence (being then almost under water) *perilous* to the last degree. The performance of so dangerous a service depended entirely on the most scrupulous observance of my orders; to secure their perfect and speedy transmission to the forecastle, a chain of Officers was established to pass the word, and by these means they were carried out by them respectively with such a degree of zeal and precision, to a fathom of brace, as I never saw surpassed, even in a royal breeze. It was imperative that the main-top-sail should be annihilated over-head, without pressing the ship; in fact, to split it to ribbands, and to prevent the weight of this powerful sail literally capsizing us; at the same time, it was necessary to humour it until it had done its duty. To have clued it up, under the chance of its bellying into a bag, would have entailed instant destruction; nor could time or force be spared: the danger was *imminent.* The Officers were apprized of my intentions, and took instant measures for securing their effectual completion. The leading seamen, themselves, seemed intuitively to comprehend my views, took their stations, and if ever ship of war could be compared to a piece of mechanism, such a comparison might have been made at this moment.

Doubtless some of my naval readers, sitting at their ease ashore, with their legs under their mahogany, enjoying their port wine and nuts, may be perusing this with a critical eye; but let them figure to themselves the position, the almost certain destruction, under received notions of "broaching to," that stared every one in the face; the necessity for thought, and action, the *getting up* of a firmness and decision at such a moment, as should inspire those around with confidence, and belief that it was in the power of their Commander to achieve their safety: these were instantaneous. I saw, that to avoid the evil of "broaching to" too abruptly, I must treat her as a well-trained horse, throw her gradually on her haunches, then give her the rein, and let her take her humour. The orders, I have already observed, were transmitted so perfectly that my views were duly executed. Handling the main braces forward, so as to neutralize, or shiver, the main-top-sail as she came to to starboard, it was occasionally spilling aback, or filled, until I could stop her way, when, watching my moment, the weather and lee main-top-sail sheets were so eased together, and the main yard braced aback as to shiver and split the sail to ribbands (this I foresaw would be commenced by the chain top-sail sheets), but under this she heeled awfully. Permission was asked "to cut away the masts," but it was too palpable, that ere five minutes could elapse our fate would be decided, my reply was, "you may order the axes up, and see to the laniards, but first ascertain for me the exact inch to which she is depressed at the main hatchway." "One inch clear, and battened down," was the firm reply, and such a reply, at such a moment, was new life. "Hold on; the masts will take her home"! That reply inspired the crew with more confidence than if they had heard the crash of the falling masts. What the feelings were of those around me I could not divine, but

I think there were but few who did not internally send up a fervent prayer to "Him who rules the storm" for our merciful deliverance. The moments were awful; safety, or probably more serious thoughts, seemed to paralyse conversation. We remained at our posts anxiously, and almost silently, awaiting dawn. The gusts were fearfully heavy, and good sea-boat as the 'Samarang' had always proved herself, still she writhed under it, and owing to her lee ports being open, lashing the water fore and aft, with a most disheartening noise. With the dawn, measures were taken for repairing defects, clearing the holds of the water shipped down the hatchways, and lightening the ship of all top hamper. About 8 o'clock we noticed a schooner on our lee bow, on which we should inevitably have fallen had it not been daylight. Setting our fore storm stay-sail, we gathered sufficient steerage way to pass under her lee, and thus saved both from much anxiety. As we passed close to her we looked for some tokens of life, and although it was very evident, from her canvas, that she was properly handled, not a soul was noticed on her decks, even at her helm; it is probable, therefore, that her helm had been lashed a-lee, and the helmsman gone below to the cabin to report our motions. She subsequently proved to be one of the Mediterranean fruit vessels.

Less than twenty-four hours had elapsed, from the rising of this gale, when we experienced a foul wind succeeded by calm, with all the concomitant disagreeables of tumbling about, and heavy flapping of the sails, a sensation particularly harassing to any one who feels for his craft, and to those who are not actively occupied, tedious beyond description. Light variable breezes succeeded until the 28th, when we had only reached within forty miles of the 'Lizard'. On the 31st Dec. we reached Spithead, and saluted the Flag of Admiral Sir Charles Ogle. The same evening H.M.S. 'Daphne' arrived, last from Vigo, having experienced the same gale.

The 'Samarang' was ordered to Chatham, but as she had on board 12,000*l.* in four-penny-pieces, returned from the Mauritius, she was detained until the weather admitted of their being landed. Late in the evening of the 5th of January, we weighed from Spithead, but the thick weather which ensued, obscured the lights, and finding ourselves too close to the Horse and Dean Shoals we anchored for the night, weighing before daylight the ensuing morning, in order to be beyond sight of the Admiral's Flag before 8 o'clock, which, I had already been apprized would entail my becoming one of the members of a Court Martial, for which they had already a sufficient number. By the naval regulations, all Captains and Commanders within sight of the Union Flag displayed on board a ship in which a Court Martial is held, are bound to repair on board in full dress. The Admirals and Captains, in seniority, until the number amounts to thirteen, compose the Court. The remainder, after bowing to the President, are permitted to retire. In the event of there being only three of the rank of Admiral or Captain the two senior Commanders are taken in to make a Court, which cannot consist of less than five, of which two may be Commanders. On the 8th of January, 1847, we anchored at the Little Nore, saluting the Flag of Vice Admiral Sir E. D. King, the Commander-in-Chief; on the morning following were mustered, and exercised in the customary inspection of gunnery and evolutions by the Flag Captain, and immediately after, aided by a steam tug, our ship was towed to Chatham.

On the 18th the 'Samarang' was paid off into ordinary, and from her being built of teak, and pretty good *proof* afforded, during her late commission, of her being *a very strong ship*, was ordered to be fitted up for Port service at Gibraltar. Upon docking, her bottom was found to have suffered much injury from her last grounding off Billiton, but nothing of a nature to have rendered her un-seaworthy for a longer period.

In consideration of the importance of the objects of Natural History collected during the voyage, the Lords of the Treasury, at the instance of the Lords Commissioners of the Admiralty, have granted a liberal sum in aid of their publication; and the work will shortly appear under the superintendence of Mr. Adams, aided by various labourers, distinguished in the several departments.

Mr. Adams' general observations on the Natural History of the countries visited during the expedition, will now follow, and the volume will terminate with a brief vocubulary of the languages spoken between Borneo and the Korea.

NOTES
FROM
A JOURNAL OF RESEARCH
INTO THE
NATURAL HISTORY
OF THE
COUNTRIES VISITED
DURING THE
VOYAGE OF H. M. S. SAMARANG,
UNDER THE
COMMAND OF CAPTAIN SIR E. BELCHER, C.B.

BY

ARTHUR ADAMS, Assist. Surgeon.

ATTACHED TO THE EXPEDITION.

"look who list thy gazeful eyes to feed
With sight of that is fair, look on the frame
Of this wyde universe, and therein read
The endless kinds of creatures which by name
Thou canst not count, much less their natures aime,
All which are made with wondrous wise respect,
And all with admirable beauty deckt."

SPENCER; *Hymn on Heavenly Beauty.*

CHAPTER I.

CAPE DE VERDS.—CAPE OF GOOD HOPE.—JAVA.

Porto-Praya—A Rainbow—Aspect of the Village—Negro Children—The Lion-ant—Vegetation of Santiago—The Bird of Pharaoh—The Fishing Eagle of Africa—The Gecko—Splendid Sun-set—Leave Porto-Praya—The Petrels — The Dolphin — Jelly-fish—Beautiful Physalia—Double the Cape—*Simon's Bay*—Scenery—Vegetation — The Honey-suckers — The Fishing Cormorant—Reptiles—The Sand-mole—The Long-eared Fox—Singular habits of a Beetle—Insects fertilizing Flowers—Leave Simon's Bay—Eve on the Indian Ocean—Habits of the Pteropods—The *Straits of Sunda*—Transparent Crustaceans—Fecundity of the Ocean—Remarkable Crabs — *Welcome Bay*, Java — Scenery—Natives—Habits of the Plantain Squirrel — The Walking-leaf Insect — The Carrier-Trochus—Animal of Marginella.

After a somewhat tedious and protracted voyage across the Atlantic, we anchored at Porto Praya, in the island of St. Jago, on the 3rd of March, 1843. The first incident that occurred to me on landing, was getting stung in the hand by a large hymenopterous insect, a species of *Pepsis*. A splendid double rainbow which just then made its appearance, soon, however, diverted my attention from that painful circumstance, for, with a high and noble arc, this "airy child of vapour and the sun" spanned the firmament, one end buried in the ocean, and the other lost behind the rugged mountains of St. Jago. On strolling through the village, nothing, at first sight, amused me so much as the astonishing number of little, pot-bellied, naked children, sprawling about the sandy thoroughfares; groups of young, black girls, dressed up in gaudy shawls, and, in many cases, smoking short pipes, contributed materially to the strangeness of the scene; while itinerant fruit-venders, ugly negroes "things of shreds and patches", shouting their unintelligible jargon, put the finishing touch to the picture. The doctrines of Malthus appear here to be utterly disregarded, and the place literally swarms with children. The negro-mother bears her living burden on her hip, supported by a broad and padded band, one of the urchins' legs being before and one behind. The countenance of these young Ethiops is most amusing and grotesque; they are always very solemn in their look, and their sloe-black eyes gleam keenly all around, save when you notice or caress them, when they hide their tiny heads in apprehension and alarm. Before they well can hobble on their legs, the heavens form their only roof and God their only safeguard. Often have I seen them sprawling on the ground, licked by dogs, pawed by playful cats, kicked by careless goats, and sometimes sorely pecked by saucy fowls; covered with dust, and scrambling on its belly, the little creature strains and giggles, striving to approach its mute companions,—poor thing, as mute itself and helpless as the worst of them!

Strolling along the beach I noticed the large, hideous Sea-slug (*Aplysia*), and the cunning *Octopus*, the manners of which are described in such a very amusing vein by Darwin.

Some parts of the sandy plains of St. Jago are covered with the ingenious pit-falls of the Lion-ant (*Myrmecleon formicarius*), and I observed that the crowd of little, naked negro-children who were collecting for me, always repeated a peculiar humming kind of song as they scratched the larvæ of this cruel tiger of the insect-world from the sand with their fingers; no doubt a kind of ditty similar to that repeated by English children, when they watch the Lady-bird take flight from their finger.

Mr. Darwin, whose delightful narrative must always be read with interest and pleasure, has justly described the usual desolate appearance of this island, but I think he has hardly done justice to its yet remaining vegetation. In the course of my rambles, even in the vicinity of Porto Praya, I was much struck by the aspect of many plants, although my eye, not then being accustomed to tropical forms, might have viewed them with an interest too earnest and partial. For, although the island of St. Jago, of a volcanic origin, is covered with a dry and barren soil, yet there may be seen plantations of Coco-Nuts, Plantains, and Tamarinds, with the Pandanus and Palmyra Palms, besides Orange, Fig, and Lemon trees, and Pine-apple plants. Near the village of Ribeira-Grande, I noticed the beautiful and elegant *Melia Azedarach*, with its lively panicles of lilac flowers, and small olive-like fruit.

The *Aloes*, growing here in large masses, have a very pretty effect when their blossoms are expanded, and, among their large yellow spikes of bell-shaped corollas, many singular small species of *Coleoptera* were found. The *Batatas edulis* is met with nearly wild, and, as it trails along the ground, its large, red, infundibuliform flowers relieve the sterile aspect of the landscape, the sombre effect of which is further enlivened by the gaudy yellow petals of the Cotton plant (*Gossypium herbaceum*). A splendid species of *Asclepias* rewarded our research, though it appeared to be very uncommon, and a pretty little labiate flower, the *Ajuga Iva,* was found in considerable numbers, which yielded, when pressed, a very agreeable odour of musk, and was hence formerly named *Tencrium Moschatum.* The *Datura Tatula,* though originally a native of Portugal, grows wild, and is a violent narcotic poison, and might be substituted for Strammonium in the practice of medicine; another species, *Datura Metel,* with a very large and splendid white corolla, is also very common. The Castor-oil plant (*Ricinus communis*) with its glaucous spikes and prickly capsules, seems to thrive here, as in most other barren places in the tropics, although the oil is not valued by the natives; the negro children, however, seem very fond of the kernels, which are agreeable to the taste and not purgative.* The *Cucumis Colocynthis* is a very common weed in St. Jago; the ripe fruit is as large as a small orange, and in the green state is intensely bitter and powerfully cathartic.

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* According to Crawford the same neglect of this useful purgative is evinced throughout the Oriental Archipelago; he says, "The Castor-oil is never, I think, used medicinally by the Indian Islanders, but is the principal material used in lamps."

At St. Jago the Bird of Pharoah (*Percnopteris leucocephalus*) not only consumes offal and excrement, but preys on lizards and locusts, eternally hovering about in a vile ignoble way, after the manner of the Carrion-Crows. Its flight is very heavy, nor does it ever soar like the Eagle or the Kite. It performs the part of an useful scavenger in a country where putrefaction is so rapid. The natives of the Cape de Verds, however, do not appear to hold it in the same veneration and respect as we are told the Egyptians did of yore. Another great destroyer of the innumerable Grylli that swarm here is the pretty *Dacelo Iagoensis*, a species of Kingfisher, a very pretty slim species of *Sylvia*, and a small Hawk, very much resembling in plumage the Sparrow-Hawk.

The Fishing Eagle of Africa (*Haliæetus vocifer*) may occasionally be seen hovering about these islands. Elastic and buoyant, this agile dweller in the air mounts to soaring heights, scanning, with sharp and piercing eye, the motions of his prey below. Energetic in his movements, impetuous in his appetites, he pounces with the velocity of a meteor on the object of his wishes, and, with a wild and savage joy, tears it to pieces. His whole sense of existence is the procuring of food, and for this he is ever on the alert, ever ready to combat, to ravage, and destroy.

Numbers of a small, black, land Salamander are found concealed under the stones among the sand, and huge Locusts swarm by myriads.

The *Tarentola Delalandii*, a singular grey-coloured Gecko, is common on Quail Island, near the anchorage of Porta Praya. It is a dull, sluggish, and retiring animal, shrouding its uncouth form in dark holes and obscure corners of the rocks. It is nocturnal in its habits, shunning the garish light of day, and creeping forth at eve to seek its insect food. Although repulsive in its aspect, it is perfectly harmless, and, like all its tribe, has the power of climbing perpendicular surfaces by its broad and plaited toes.

On the 7th of March we left the Cape de Verds; a sluggish mist covered the distant mountains, and the sun, which looks very large in these latitudes, as he sank below the horizon, appeared to have burst, and, like some gigantic meteor, to have poured forth all its fire in one stupendous flame-coloured fan, or gold and crimson tail of some unheard-of bird. The great comet was visible during the night. During our passage across the Indian Ocean, I was much amused in observing the mode of flight of the Petrels. These wild and free-born denizens of the deep, seem to sport in all the consciousness of liberty. They cleave the atmosphere of their boundless home on rapid wing, soaring aloft with the lightness of a feathery cloud; they skim the surface of the deep, they float upon its bosom, and I have seen the storm-loving Petrel (*Thalassidroma pelagica*), that "wanderer of the sea", dive beneath the waters to secure its prey. They always love the troubled ocean, for then their food is more easily procured, and when the sky is lowering and the scud begins to rise, when the wind blows high and the billows are crested with foam, the Petrels are abroad.

The species differ in their modes of flight: the Giant Petrel (*Procellaria gigantea*) flies in a wild and sweeping manner, poising himself, and often remaining motionless in the air like an Eagle. The flight of the Cape Pigeon (*P. Capensis*) is erratic, and neither powerful nor rapid. There is one species as large as a Kestrel, and entirely of a sooty black; it has long powerful wings, and a rapid steady flight, like the wide sweep of some gigantic Swift; these hunt in couples, and are very wild and shy. Another, called the "Whale-bird" by the seamen, is solitary in his habits, and his sweep across the ocean is more extensive than that of other species. This, as well as *P. turtur* and *Forsteri*, describe vast circles in the air, and dart suddenly on their prey. Another wild and sprightly species is not much larger than a Lark; erratic, wavering, and rapid in its flight, it always keeps aloof from the ship, and, even more than any of the others, appears to delight in stormy weather.

During our passage the sailors were fortunate enough to catch some Dolphins, and, although the beauties of this fish when dying have been so often expatiated on, perhaps the following note, made at the time, may not be uninteresting, for I fancy that in no two Dolphins do the dying colour-changes follow precisely in the same order. The one I observed, from a grass-green, covered with round ultramarine spots, became silvery, and the green faded, while the deep blue of the dorsal fin, and golden green of the back, remained. From this, it changed to a burnished brass colour, the blue spots vanished, and were succeeded by an azure tinge on a silvery ground, followed by a dull, opaque, leaden grey. One poet has said,

> "parting day
> Dies like the Dolphin, whom each pang imbues
> With a new colour as it gasps away,
> The last still loveliest, till—'tis gone and all is grey."

There are many other fish that change colour several times before they die; I have seen species of *Pimelodus* or Cat-fish, change from a warm and glowing smalt, during the last few pangs, to a dull leaden hue, losing, at the same time, the delicate pinky tinge of the sides and abdomen. The common Sucking-fish (*Echineis Remora*) from a brown, bright, shining, blackish colour, changes, even in the water, to a leaden hue, and, as it dies, assumes a tancolour, which grows paler by degrees until it fades into a dirty white.

In calms, the South Atlantic abounds in *Acalephæ*, and much amusement may be derived, in a long sea voyage, from the observation of these beautiful organisms; for endless are the moulds in which prolific Nature has cast them. Some are shaped like a mushroom, others assume the form of a riband, others are globular, while some are circular, flat, or bell-shaped, and others again resemble a bunch of berries. Their motions are generally tardy, their sensations dull, and directed entirely to the procuring of food. They often float without any apparent animation, trusting to the winds and waves to waft them about, and to carry them their food. Some keep a little beneath the surface, and propel themselves by contracting and dilating their pellucid discs, while others, as the *Beroe*, have a rapid rotatory motion. They have been termed the "living jellies of the deep", and are endowed, in many cases, with an acrid secretion, which, irritating the skin, has also caused them to be called "Sea-nettles." There is one large species common in the Straits of Singapore, dreaded by the Malays, on account of the violence of this power. Dr. Oxley informed me that he was obliged to amputate the thumb on account of the violent inflammation, induced by this poison, in the person of a Malay fisherman.* In colour, perhaps, the most delicate is the lovely *Velella,* with its pellucid crest, its green transparent body, and fringe of purple tentacles. Specific distinctions have been taken from the form of the crest, as in *V. pyramidalis,* but I have noticed this part rounded, more or less pointed, and, in some cases, even lobed, in what I have considered the same species.

The *Velella* has been seen as far north as 40°, covering a large surface of the Pacific Ocean, and tinging the water for many miles. I have seen them covering the coasts of some of the Islands of the Meia-co-shima Group by myriads, strewing the beach for miles with their delicate, pellucid skeletons.† Sir Edward Belcher informs me that he has attempted to reduce them to isinglass, by boiling, but that they appear to be quite worthless in a commercial point of view.

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* I have seen *Rhizostomata* off the Peninsula of Malacca swimming by in large troops, comprising many thousands of individuals, many of which measure as much as three feet in diameter. They have been found to weigh, according to Peron and Lesueur, as much as from fifty to sixty pounds. The same naturalist, speaking of these animals, observes, that "they seem extremely feeble, but fishes of large size are daily their prey."

† Professor Owen, in his ninth Hunterian Lecture, for 1843, observes that occasionally some of the singular forms of *Acalephæ* of the tropical seas are stranded on the south-western shores of England. "I have picked up on the coast of Cornwall the little *Velella,* which had

The *Physalia*, or "Portuguese man-of-war", is very delicately tinted, sometimes white and pink, and sometimes of a lovely lilac, with a pale crimson crest. Byron has termed the Nautilus "the Ocean Mab, the Fairy of the Sea"; modern science has, however, dispelled the poetic illusion of "oars and aerial sails", and altered its mode of progression altogether. The phrase of the poet will more particularly apply to the above-mentioned *Acalepha*, which rears its fragile crest above the waves in the calm regions of the tropics, and allows the gentle breeze to waft it on its course.*

Among the numerous varieties of *Physalia pelagica* found by us floating on the surface of the Indian Ocean, was one taken in trawl, of a form so peculiar, and of a colour so distinct, as to warrant its being called by a different specific name, although the form of the bladder alone is not sufficient to characterize these animals. The body of this specimen was of a delicate transparent blue, and the crest, twisted slightly on itself, was lilac, blending

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been wafted thither, unable to strike its characteristic lateen sail. There also I have seen wrecked a fleet of the Portuguese men-of-war (*Physalia*), which had been buoyed by their air-bladders to that iron-bound coast."

* I observe by his Hunterian Lectures that the same idea occurred to the mind of Professor Owen. Alluding to *Velella*, he says, "one of the genera, *Velella*, has a process of the firm internal skeleton, arising from the upper surface of the body-disc, to which it is set at the same angle as the lateen-sail of the Malay coast; it is wafted along by the action of the wind upon this process, and may have been mistaken for the fabled Cephalopodic paper-sailor (*Argonauta*)."

into pink towards the summit. The vesicle was, moreover, provided with three horn-like appendages, one curved like an Ammonite, of deep Prussian-blue, with another of a smaller size projecting from it, and a third, of a green colour, situated at the opposite extremity of the vesicle. The tentacles and ovaries were of dark-indigo colour.

On the 25th of April, 1843, we were anchored in Simon's Bay. As you double the Cape, the scenery looks very uninviting to the eye of the naturalist, who views it for the first time, but as you draw nearer, the mountains grow more and more interesting. The wild and naked aspect of the almost savage scenery is much improved by woody gorges or chasms, and even on the brown sides of the mountains, coloured patches soon appear on your nearer approach, as the numerous species of heaths and composite flowers begin to be recognized, and now and then some picturesque knoll, crowned with a fantastic tree, will interpose its form, and break the monotonous outline of the landscape.

During our stay there, the deep water of the offing appeared to swarm with endless varieties of the "finny drove", and the hollows in the rocks, and the shallow ponds along the sandy shores, were full of interesting Mollusks, and curious Crustaceans. If you climb the mountains, in some of the woody thickets you may chance to hear the beautiful golden Cuckoo, uttering at intervals its short, sharp note, or you may observe large showy-looking Shrikes, darting about, busily intent on prey, lively Creepers, clinging, in sportive attitudes, to the over-hanging boughs, and the pretty Wood-pecker *(Dendrobates griseocephalus)*, climbing up and down the boughs, sounding, with his bill, the rotten portions of the tree, for there he knows he is sure to find choice morsels. For the botanist, there are many objects to attract the eye, even immediately after landing.

The *Plumbago Capensis* ornaments every cultivated patch of land at Simon's Town, relieving, by its lively blue corollas, the sombre hue of the dry and arid soil; and numerous feathery *Acacias* spring up in the centre of the town, delicate, graceful, and refreshing. The *Mesembryanthemum edule* covers the sterile grounds, and adorns the parched and sandy earth with verdure, where no other plant will grow; and the bare rocks are ornamented with moss, and variegated with a thousand different Lichens. The Ferns I gathered were most beautiful Not very far from Simon's Town, there is a wild and rugged chasm, with a stream tumbling down the middle, rolling hurriedly in its headlong course, and scattering a refreshing moisture on everything around, where these delicate and lovely *Cryptogamia* grow in great profusion. Here the minute and fragile fronds of the *Hymenophyllum*, the curious foliage of the *Pteris*, the narrow-leaved *Blechnum*, the elegant *Adiantum*, and a rare and singular species of *Asplenium*, either with the fronds laden with sporules, or with the fructification pretty far advanced, are seen springing from the damp surface of the rocks, or waving gracefully from the fissures, like so many emerald plumes. In the immediate vicinity of the town, the silvery catkins of *Cunonia Capensis* glitter in the sunbeams, and the huge downy blossoms of the Silver tree (*Protea argentea*) attract numerous sun-birds and honey-suckers. The rich orange bells of the *Leonotus Leonora*, the showy flowers of a hundred *Ericaceæ* (the pride of the colony) and the diversified forms of the ever-changing *Proteas,* mingled with extraordinary looking *Staphelias, Myrtles, Diosmæ, Gladioli,* and *Salvias,* form together a rich and varied feast for the florist, and to the botanist, a collection of a mixed and most singularly beautiful description. In the neighbourhood of the Table Mountain, and for some considerable distance up its flanks, the character of the vegetation is very analogous to that already noticed. Magnificent *Acacias,* and majestic *Aloes,* grow at the foot of the mountain in splendid condition, elevating their showy forms far above the prickly shrubs, and lowlier plants that grow around them. The aromatic *Diosma,* the juice of which the aboriginal Hottentots mingle with the grease with which they anoint their bodies, here grows in rich abundance, scenting the very sod beneath the feet; and many a gay *Lobelia* gems the earth around.* Whole tracts are covered with luxuriant Proteaceous plants, *Apocynums, Asclepiadaceæ, Stapeleæ, Pelargoniums,* in full flower, mixed with fantastic *Euphorbias,* gay *Heaths,* succulent *Crassulaceous* plants, *Arums,* and *Lilies,* giving the dry heathy nature of the scenery a peculiar charm, quite unexpected in such an apparent waste and desolate expanse. Nor must numerous delicate and ornamental *Iridaceæ,* and the fantastic blossoms of the *Orchis* tribe be passed over in silence, for various are the singular shapes that cross the path in traversing these barren plains of Africa.

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* Among the botanical curiosities of the Cape is the long-spined *Euphorbia heptagona,* with the milk of which the Kaffirs poison their arrows; the Dill (*Anethum graveolens*) is not uncommon; and the pretty-looking Marigold (*Calendula pluvialis*), which indicates fine weather, by opening its flowers like the 'Shepherd's weather-glass', or scarlet Pimpernel (*Anagallis arvensis*) of Europe, may also be mentioned, although volumes have been written on the vegetation of the Cape.

The sandy parts from Simon's Town to the Table Mountain, are covered with the succulent leaves of the Fig-Marigold, which gaily disports its yellow blossoms in every direction, while *Euphorbias,* of anomalous forms, spring up around, startling the eye with the strange fantastic shapes they almost invariably assume. In short, the way of the traveller is cheered at every step by strange and brilliant flowers, and curious plants that give an air of pleasing variety to the otherwise rude wilderness of the Cape.

Among the most interesting objects that attract the eye of the naturalist, during his excursions in the vicinity of the Cape, none are more likely to interest him than the Honey-suckers and the Cormorants.

The *Nectariniæ,* or Honey-suckers, do not differ materially in their habits from the Fairy-like Sun-birds, except in clinging to boughs and stems, more after the manner of the *Certhiæ.* They stoop their heads, and insert their long and narrow beaks into the tubular corollas, to search for the honey and insects of the nectaries. From analyses of the contents of their stomachs, I ascertained that their food is always insects and honey. They are more homely and unpretending in their feathery garb, and want the vivacity and dazzling aspect of their fellow-plunderers, the *Cinnyrides.*

The Cormorant forms quite a peculiar feature in the scenery of the Cape coast. Seated on the rocks, with sundry Divers and Penguins, upright, motionless, and solemn, they remind you of some magisterial assembly in their sable robes, met together in grave and earnest conclave. The Cormorant of the Cape lays its eggs in holes, among the rocks, and the insatiate young ones, although constantly gorged by their industrious fisher-parents, yet are never satisfied, but with open beak, eager eye, and out-stretched neck, they flap their formless wings, and appear to be continually crying out "more, more"!

The Fishing Cormorants of the Cape (*Phalacrocorax Africanus*) usually unite to form large fishing parties. They wind their way, in single file, starting from the rocks along the shore, then swimming in the tranquil waters of the bays, invariably led on by some experienced and sagacious old admiral, they commence their fishing. When their pilot spies a shoal of fish he suddenly makes a vault out of the water, arching his neck, bending his body, and drawing up his legs, when diving headlong down, he is followed immediately by all his anxious adherents, who perform their somersets in precisely the same manner. The flotilla remains submerged some little time, when it rises once more to the surface, and the feathered fishers again renew their diving and plunging piscatory evolutions. During short rambles in the vicinity of the Cape, many interesting forms may be obtained by the naturalist. Among others collected by us was the *Agama hispida,* a hideously ugly Lizard, sluggish in its habits, and having a very broad body, covered with spines, a very short tail, and, as customary more or less with African animals, coloured with that tint which Schlegel emphatically calls the "colour of the desert." I have seen a variety of this *Agama* with the skin perfectly smooth, and even the tail almost entirely devoid of spines. A friend succeeded in killing a very large specimen of the *Naja nivea*, the bite of which is considered very deadly by the inhabitants of the Cape; Tortoises (I believe *Testuda geometrica* and *T. angulata*) may be procured, at certain seasons, in any numbers, by taking the trouble to climb the mountains. I have frequently picked them up in my walks, and our Surgeon, Dr. Mahon, on the roadside from Simon's Town to Cape Town, made captive a very large flat-backed Water-Tortoise (*Emys galeata*) which was fishing in a pool. It is rather remarkable that this same Tortoise is the only one, out of several dozens of Tortoises brought from the Cape, now alive in England, although from the date of his capture to the present, it has been kept almost entirely from the water.

Notwithstanding the apparently revolting smell and disgusting nature of Cockroaches, many animals, besides the little *Otocyon Lalandii*, are passionately fond of them. Several *Graculi religiosi* on board our ship were in the habit of hopping about the lower deck, greedily pursuing and devouring them. A small monkey took, likewise, great delight in seizing and masticating them, with much gusto; to say nothing of our peacocks, which were passionately addicted to their consumption. In England, as is well known, the Hedge-hog is kept for the purpose of thinning their numbers.

The Sandmole .(*Bathyergus maritimus*) causes great havock in the gardens, in the vicinity of Simon's Town, undermining the parterres, and consuming the roots of the flowers. I saw several unfortunates just dug out of their burrows by a little negro boy, who informed me that he was employed by a certain old gentleman, owner of a garden in the neighbourhood, to destroy these depredators at so much per head. Although called *Zandmoll* by the colonists, it is a true Rodent, but lives under ground, and raises hillocks like the Mole of Europe, or the Tucotuco (*Ctenomys Brasiliensis*) of South America. Like that little animal, also, it renders the ground in some parts, unsafe for horses, owing to the long loose subterranean galleries it forms in the sand. Although furnished with very minute eyes, the Tucotuco is not absolutely blind, as Darwin affirms it to be. They very soon die in captivity, like the common Mole, which I could never succeed in keeping alive for any length of time. The skeleton of the *Bathyergus* reminds one somewhat of that gigantic extinct quadruped the *Megatherium*, but of course on a diminutive scale.

A large species of *Ateuchus*, a kind of Beetle, is common in the sandy roads about the Cape. You will see it, frequently, like Sisyphus, rolling a huge round ball of dung up a bank, by placing its hind legs against it, and moving backwards. It frequently happens, that the ball which contains the eggs rolls to the bottom, when the poor patient Beetle begins its toilsome labour over again.

> ————" adverso nixantem trudere monte
> Saxum; quod tamen à summo jam vertice rursùm
> Volvitur, et plani raptim petit æquora campi." *

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* Lucret. lib. iii. ver. 1013.

The *Ateuchus Ægyptiorum*, the Beetle held sacred, and so often seen depicted in the hieroglyphics, and carved on the monuments, of the ancient Egyptians, has the same habit of enclosing its eggs in large round masses of excrement, and rolling them along with its hinder legs for the purpose of burying them in the ground.

The Cape, although very well explored by travellers, yet appeared to me to offer fine opportunities to the Entomologist, so great seemed the variety of insect-forms everywhere encountered. The large white spathas of the *Arum*, which grows abundantly in the vicinity of Simon's Town, usually have specimens of *Anisonyx*, and other *Glaphyridæ*, feeding on the spadix, and assisting the process of impregnation by throwing about the pollen as they move their bodies, which, for this purpose, are covered with long hairs. Feeding on the *Protea argentea*, or Wittle-broom, the splendid plant which is commonly used as fire-wood at the Cape, I have found species of *Hopliæ*, *Dicheli*, and other *Melolonthidæ*, which apparently seem to perform the same kind office of disseminating the pollen from flower to flower. Smaller species are found imbedded, by dozens, in the heads of the composite flowers, in company with a single *Cetonia pubescens*.

On the 6th of May we left Simon's Town for Singapore, and after a somewhat tempestuous passage across the Indian Ocean, arrived at Welcome Bay, in the Straits of Sunda, on the 10th of June. There are certain phenomena to be observed, and animals to be studied, however, even when traversing the high seas, with no land in sight. As, for example, when the wide ocean heaves languidly in its mighty bed, and, lost in gorgeous hues, the dull red disc of the setting sun sinks slowly down beneath the horizon, the Noddy and the Frigate Pelican, those "feathered fishers", seek a resting-place for the night; the "Tropic bird wheels rockward to his nest"; the Petrels are no longer seen, the ghost-like Albatross comes sweeping by, the Dolphins cease to bound, and the *Acalephæ*, and other fragile beings of the deep, return to unknown solitudes. But the lovely *Ianthina*, and the fairy-like *Physalia*, do not gather in their floats, but, in company with the giddy *Hyalæa*, now sport upon the surface; the *Creseis* and *Cleodora*, those living hairs of glass, that glitter in the moon-beam, are more numerous than in the day, and the *Argonauta*, *Carinaria*, and *Atlanta*, take their pleasure on the surface of the sea.

The *Pteropods* are little active and energetic Mollusks, common in almost every sea. They are the very butterflies of the deep, and, from their extreme vivacity, would appear to be possessed of acute sensibilities. Insatiate and greedy, they are ever on the move, spinning, diving, and whirling in every direction. The *Hyalæa tridentata* reminds one forcibly of the erratic diving and plunging evolutions of the *Dyticus*, and *Hydrophilus* of the ponds of Europe. The *Pneumodermon*, when touched by a foreign body, feigns death, rolling itself up in a ball, like an Armadillo, or *Glomeris*. The *Cleodora Balantium*, one of the handsomest of the tribe, is much steadier in its mode of progression, than *Hyalæa*, *Creseis*, or even *Cuvieria*, owing, probably, to the comparative weakness and small size of the alar membranous expansions. This species, as well as the *Cleodora cuspidata*, when alive in the water, is perfectly pellucid, although it almost invariably becomes semi-opaque when dry. Among the species, most numerous in individuals, that commence their lively evolutions towards the decline of day, on the calm bosom of the ocean, may be mentioned *Hyalæa longirostra*, of Leseur, and the beautiful and delicate *Hyalæa trispinosa*, of the same naturalist.

On the 10th of June, 1843, we slowly sailed through the Sunda Straits, the tranquil waters of which were crowded with myriads of diaphanous Crustacea, of the genera *Erichthus*, *Phronima*, *Stenosoma*, *Alima*, *Nerocila*, *Idotea*, *Spheroma*, and others, creatures ever sparkling beneath the wave, and glittering, as their glassy shields reflect the rays of the sun. They swim leisurely in dense strata near the surface, sinking, however, when the sea is at all ruffled. M. Risso says, "they empty the pellucid discs of certain *Acalephæ* to serve them as canoes," which curious circumstance I have been several times able to confirm. These small isopodous, horny, and generally-transparent Crustaceans, do not swim like the *Crangon*, with the belly upwards, and by sudden jerks backwards, but propel themselves steadily onwards by repeated contractions of the post-abdomen, and natatory caudal appendages. They are exceedingly predatory and voracious, occasionally seizing *Medusæ* of greater bulk than themselves, holding them in their prehensile jaw-feet, and tearing them in pieces with their mandibles.

On these occasions, one must naturally be impressed with the astonishing fecundity and diversity of form exhibited throughout creation. Each portion of the large masses of floating weed consists, when carefully examined, of a little densely-populated world, being crowded with living beings, all active and full of bustling animation; strange-shaped little fishes, bright sea-slugs, tiny shells of the Nautilus tribe, grotesque sea-spiders, and whole gangs of odd crabs, *Medusæ*, and transparent shrimps. The Podosomatous forms of spider-like Crustaceans are very slow and languid in their progression, moving their slender articulations but feebly, seemingly as if encumbered by their inordinate length. They hide in hollow sponges, or the anfractuosities of madrepores and corallines, and some I have seen take up their abode among the spines of large *Cidares* and *Echini*. Their habits, are slow, sly, cautious and predatory. We found them in large numbers in the sea of Mindoro in twenty fathoms, and sandy bottom, entangled in huge bunches of pinnatiferous *Keratophytes*.

In the Straits of Sunda, we obtained by the dredge several fine specimens of the beautiful *Galathea elegans* of White. It is very active in its movements, darting backwards by sudden powerful jerks, snapping its chelæ quickly together, and producing a clicking noise. When swimming, the post-abdomen is first bent under the body, and again violently forced backwards. In the recent state, the body of the common variety is yellow, with three dark-red bands. The post-abdomen is pink. The chelæ are bright pink, and finely marked with two series of dark-brown irregular spots. The legs are pink, with a dark stripe on the femur, and a brown transverse band on the penultimate joint. The under surface is flesh colour with two longitudinal stripes on the breast; frontal spine orange. Near the same spot a specimen of that very rare and remarkable Crustacean, the *Tlos muriger*, of White, was dredged at a depth of ten fathoms, associated with specimens of other crabs, chiefly of the genera *Leucosia* and *Philyra*. It is as inert and feeble in its progressive movements as *Calappa* or *Cryptopodia*.

While lying in Welcome Bay, in Java, I obtained from one of the Javanese, who thronged about us in their canoes, a very pretty specimen of Squirrel, and as I had it some time in my possession, for the purpose of observing its habits, a brief account of this little quadruped may not prove uninteresting.

The *Sciurus bilineatus*, or Plantain Squirrel, is constantly kept by the Javanese as a pet. One I had in my possession was an amusing little animal, full of frolic, and playful as a kitten. He never carried his tail over his back, like the greater number of his consimilars, but would trail it gracefully along the ground. When angry, he would dilate this ornamental appendage, and bristle up the hairs, like an irritated cat. His natural cry was a weak chirping sound, but when teased beyond his powers of endurance, he would make a sharp, low, and passionate noise. He seemed to court caresses, and received them with pleasure. His food consisted of Bananas and Cocoa-nuts, which he would usually nibble like a rat, though sometimes he would place it between his paws. He was a remarkably cleanly little creature, continually dressing his fur in the manner of the *Felinæ*. When he slept, he rolled himself up in a ball like the Dormouse, with his tail encircling his body. Always active and blithe, he would sometimes perform feats of extraordinary agility, bounding to great distances, and clinging to every object within his reach.

The only specimen of *Phyllium*, or Walking-leaf insect, whose habits I have had an opportunity of observing, was given me by the Resident of Anjer, together with some young Guava plants, on the foliage of which it subsists. It was very inactive during the day, hanging suspended by its fore-feet to the leaves of the Guava, but on the approach of night, it would walk about with an undulating motion of the body, or hanging suspended, as during the day, would rapidly vibrate its leaf-like wings, in a tremulous manner. On two occasions it took short flights, but soon fell to the ground as if exhausted. It feeds voraciously as evening approaches, biting out large semi-circular bits from the edges of the leaves. This insect, which was a female, dropped an egg every night for some time. The egg is in the form of an elongated, pentagonal cylinder, with the angles winged, and, like the eggs of other *Phasmidæ*, provided with an operculum at one end. The eggs are white on their first emission from the body of the mother, but afterwards become darker and darker until they eventually assume a brownish-black colour. The ova were retained in the ovipositor sometimes for half a day, as are those of the large *Blatta*, that common nuisance on board ship. The *Phyllium*, whose habits are alluded to above, is most probably a new species, and is in the possession of Sir Edward Belcher.

At Anjer I had an opportunity of examining the animal of a very large and handsome species of *Marginella*. The *Marginellæ* are quicker and more lively in their movements than *Cypræa,* crawling pretty briskly, and moving their tentacles in various directions. They travel much faster than a snail. The two dilated anterior angles of the foot appear to be endowed with acute sensation, the animal making use of them as feelers. Many are of the most beautiful, and brilliant colours; a pale, semi-transparent, pinkish-yellow mantle, with a range of semi-elliptic crimson spots around the thin free edge, and the remainder covered with vertically radiating, linear spots, and short waved lines of the same colour; the foot, also of a yellowish delicate pink, is marbled all over with the deepest and richest crimson, and the same with the siphon. The tentacles are yellowish, with a row of marbled crimson spots. The eyes are black, and very minute. The animal of the species above described, when roughly handled, retracted itself entirely into the shell. It was dredged up in three fathoms water, sandy bottom, not far from Anjer, in Java.

Another species of *Marginella,* from the east coast of Africa, is similar to the former, but the foot is rather more expanded and more rounded behind. The left side of the mantle is rather more produced over the body of the shell than the right. The ends of the tentacula, and siphon, in this species, are yellow, and the basal parts streaked with carmine. A third species from Unsang, east coast of Borneo, also taken with the dredge, was of a light-brown colour, with burnt sienna around the margin of the mantle.

I may, here, perhaps, introduce a brief notice of the habits of the Carrier-Trochus, or *Phorus,* whose history, at present, is so little known; on our passage from Singapore to Java, numerous specimens were obtained every time the dredge was used.

The *Phori* are very numerous in the China and Java Seas, living in from fifteen to thirty fathoms water, and generally preferring a bottom composed of the detritus of dead shells and sand, mixed with mud. I have described the animal, for the first time, in the 'Annals and Magazine of Natural History.' As a curious adaptation of means to answer a certain purpose, the mode of progression of these singular Mollusks is peculiar, and deserving of notice. They crawl like a tortoise, by lifting and throwing forward the shell, with the tentacles stretched out, the proboscis bent down and the operculum trailing behind. As they invariably inhabit places where the surface is rough, and would not admit of a gliding motion, nature has ordained that they should progress by a succession of small jumps, or tumbling evolutions. In the shortness of the foot, long annulated proboscis, and cylindrical body, these Mollusks resemble somewhat those of *Imperator*, but the sessile eyes, divided foot, and nature of the operculum, render them a perfectly distinct family. In the operculum being partially free, they approximate to *Solarium*, whilst the short divided foot, cylindric body, and long extensile trunk, reminds one of the animal of *Ianthina*. They are small for the size of the shell, and have much the general appearance of the animal of *Strombus*, like which they appear to walk, but their eyes are sessile. In order to enable them to escape from their enemies, nature has instructed them to cover their shells with the same materials as those of the banks which they inhabit. Sometimes for this purpose they select sand, often small stones, and more frequently the debris of dead shells, belonging to other genera. The *Thelidomus*, which might be considered as the fresh-water analogue of *Phorus*, has, I believe, been ascertained to be formed by the larvæ of an insect, thus depriving Mr. Swainson of a favourite type among Mollusca. The animals of *Phorus* are of a dull, opaque-white colour, the eyes large, and black, and the proboscis pinkish. In *P. onustus* of Reeve, the end of the proboscis is yellow, and the inferior surface pink. The operculum is horny, soft, and flexible, with concentric and radiating fibres covered with ridges, formed by the fibres being elevated, one above the other, in succession.

Among other peculiarities in the habits of Mollusca, perhaps one of the most striking is the case of *Stilifer*, a little parasite that lives upon the juices of, and takes up its abode in, the coriaceous integument of Star-fishes. Having, by means of its long, narrow, and slender foot, insinuated itself among the sutures of the armour the Asterias is provided with, it forms a snug nest in the soft parts, where it remains imbedded, with the apex of the spire just protuding. When placed in a watch-glass, under the microscope, I observed that it does not appear to be possessed of the power of locomotion, but that it extrudes its foot to its greatest extent, and makes use of it as an exploring organ, moving it about in all directions.

CHAPTER II.

BORNEO.

Arrive at Sarawak — Gigantic Orthoptera — Remarkable Insects — Curious habit of a Beetle—Prevalence of certain tribes of Insects —Butterflies—Insects used as Ornaments—A splendid Glow-worm—Instincts of Spiders—Singular Forms of—Habits of— The Close-eyed Gudgeon — The Fighting-fish of Siam — The Organ-fish—Curious Blenny—Thunder Storm—Tree struck by Lightning—A Man killed—The Crocodile—Nondescript Plant— Habits of the Musang—The Slow-paced Lemur—The Wou-Wou The Flying Fox—The Pitcher Plant—Forest Scenery—Exuberant Vegetation—Aspect of the Woods by Day—Their appearance at Eve—Nocturnal chorus of Animals — Night Alarms— Gigantic Lizard—Beautiful Tree-Snake—Enormous Cobra—Capture of a Python—Adventure with a Snake — Changeable Lizard — The 'Toké'—The Chichak—The Grass Lizard—The Bingkaron— The Fringed Gecko—The Flying Dragon.

From the 19th to the 26th of June we remained at Singapore, but as we made that busy Emporium of the East a recruiting port on four separate occasions, I shall, at present, refrain from offering any remarks on the natural history of that important little island, nor need I here detail our proceedings in Borneo, nor expatiate on the disaster that there awaited our good ship, as all that has already received ample justice in the Narrative of Sir Edward Belcher. The following remarks are the result of my impressions of scenery, and observation of various forms of animated nature, with which I became acquainted during the period of the detention of the ship at Sarāwak.

In the vast forests of the interior of Borneo, there are found enormous Orthopterous insects, huge Grasshoppers, as large or larger than sparrows, of inert and somewhat inactive habits, which hop feebly among the undergrowth, in damp, dark, shady places. A specimen, presented to Sir Edward Belcher by Mr. Brooke, at Sarāwak, was of this nature. A giant in size, it measured more than four inches in length; the leaping members not being well developed, the antennæ filiform and of great length, and the colour entirely of a beautiful delicate grass-green. Unfortunately, this magnificent insect was lost, with very many other interesting specimens, during the disaster of the ship in the river. A drawing, which I made before the occurrence of the accident, shows it to belong to an apparently new genus, placed somewhere between *Steirodon* and *Phylloptera*, and, should it eventually prove such, I would suggest to its fortunate re-discoverer, that it should be named *Megalacris Brookei*, in honour of the philanthropic and talented Rajah of Sarāwak, who first procured it from Dyaks, who brought it from the interior of the island. Orthopterous insects swarm in many parts of Borneo, and among others which I have observed may be mentioned, as being of especial interest, a *Gryllacris* with dark chesnut bands on the elytra, and an orange body; a new and singular *Gryllacris* covered all over with a velvety coat, like the Mole-cricket; an elegant *Phylloptera,* with bright, yellowish-green, semi-pellucid wings, and the head and thorax covered with small, raised pustules; a golden-brown *Acheta,* a very pretty, lively insect which takes prodigious leaps; a singular *Cyphocrania,* with the back of the head produced into a horn, and long reticulated, semi-opaque, brown wings; and a new species of *Blepharis,* an insect apparently made up of so many withered leaves, which crawls very slowly among the foliage of the low trees, and takes short feeble flights like an *Empusa.* The chief use of the *Geotrupidæ,* and other coprophagous Beetles, in tropical countries, would seem to be not so much to remove excrementitious matter from the surface of the earth, as to spread it abroad for the purpose of manuring the soil. This they effect by first collecting it in convenient round balls, or masses, in which they deposit their eggs, and then, rolling them along with their hind legs, they bury them in different places in the ground. Such was the useful occupation in which I found a species of *Gymnopleurus* engaged, under the shade of a grove of Casuarina trees, where the ground was covered in many places with large quantities of the dung of wild boars and of deer, which dozens of these indefatigable black-coated gentry were carefully spreading over the soil.

From the chrysalis of the only species of the *Sphynx* Moth I had observed in Borneo, and treasured by me with great care, emerged, after the lapse of a considerable time, two individuals of that odd-shaped, cosmopolite, hymenopterous insect, the *Evania appendigaster*! The coprophagous Beetles, and the scavenger *Staphylinidæ,* *Silphidæ,* and carnivorous *Carabidæ,* are by no means numerous in Borneo, their place being more than occupied by the myriad *Termites,* Ants, and other insects that keep the surface free from putrefying objects. The Lamellicorns and other vegetable feeders are, on the contrary, very common forms, and, in conjunction with innumerable species of *Orthoptera,* feed upon the plentiful supply Nature has provided for their use, in the vast forests that everywhere clothe the surface of this fine island.

Enormous diurnal *Lepidoptera,* the handsome, great *Ornithopteri,* are generally noticed flapping lazily their large, broad wings in the dark mazes of the forests, sweeping above the low trees, and avoiding the climbers and branches of the taller trees, with a singular bat-like dexterity; although tolerably numerous, the Butterflies, however, cannot vie with those of Tropical America. In a ramble through the woods, near Santubon, I procured specimens of a rare and splendid species of *Pycanum,* allied to *P. amethystinum* of Fabricius, having bright, burnished, emerald-green elytra, and the body ornamented on each side with alternate bands of black and orange. The *P. amethystinum* is sometimes set in a brooch, as among certain Indian tribes are the *Buprestis chrysis* and the Diamond Beetle. In the Philippines, the beautiful, polished, green species of *Stephanorhina,* and the handsome *Caryphocera,* with large black blotches on the elytra, are also held in much estimation, and are preserved in a dry state as ornaments. One of the most common Hemipterous insects (which, taken as a class, not only appear to be very numerous in Borneo, but also very curious in form and brilliant in colour) is a species of *Catacanthus* allied to *C. aurantius* of Fabricius, with a bright yellow thorax, two black spots on the elytra, and the margin of the abdomen marked with alternate bands of light, clear, semi-transparent yellow and deep shining black; a very pretty species of *Callidea,* a genus belonging to the *Scutelleridæ,* of a burnished golden green, with large, round, black spots, is also very common in the woods throughout the territory of Sarăwak. But, perhaps, one of the most beautiful insects observed by me while staying in this part of Borneo, was a Glow-worm, two females of which were in my possession. In this splendid *Lampyris,* each segment of the body is illuminated with three lines of tiny lamps, the luminous spots on the back being situated at the posterior part of the segmentary rings in the median line, while those along the sides of the animal are placed immediately below the stomates or spiracula, each spiraculum having one bright spot. This very beautiful insect was found shining as the darkness was coming on, crawling on the narrow pathway, and glowing among the dead, damp wood, and rotten leaves. When placed around the finger, it resembles, in beauty and brilliancy, a superb diamond ring. The Spiders constitute another highly amusing study for the entomologist in these regions, so dismissing for the present, our tiny friends the *Ptilota,* or winged insects, let us regard a few of these Apterous forms, usually considered so repulsive, the Spiders.

In consideration of their apparently helpless condition, and the soft nature of their integuments, Nature, always inclined to protect the weak and helpless, has given the

Spiders a multitude of wonderful instincts, by means of which they are enabled to defend themselves from injury, provide themselves with food, and furnish safe retreats for their tender progeny. They spin their toils of cunning device, and even powerful insects, armed with formidable stings, are made captive with impunity, despite their struggles to escape the captor. These Spiders' webs generally attract the attention of travellers, and, certainly in some parts of the forests of Mindanao, Borneo, and Celebes, there is great and wonderful diversity in the form and construction of these ingenious and delicately-woven nets. Many have black webs, some have white, others brown, and in Mindanao I have observed toils formed of perfectly yellow threads. The nets of the great species of *Nephila*, which abound in equatorial regions, frequently stretch across the path, from bush to bush, and prove very troublesome to the naturalist while threading the thickets where they are numerous.

The imagination can scarcely conceive the bizarre, and fantastic shapes with which it has pleased Nature to invest those hard-bodied Spiders, called by naturalists *Acrosoma*. They have large, angular spines sticking out of their bodies, in every kind of fashion, perhaps intended as some sort of defence against the soft-billed birds, which doubtless would otherwise make dainty meals of these Arachnidans, exposed as they are, temptingly suspended in mid air, on their transparent webs in the forest glades. Some are protected by these long spines to such a degree, that their bodies resemble a miniature " cheveux de frise ", and could not, by any possibility be swallowed by a bird without producing a very unpleasant sensation in his throat. One very remarkable species (*Gasteracantha arcuata*, Koch) has two enormous, recurved, conical spines, proceeding upwards from the posterior part of the body, several times longer than the entire Spider. The *Drassi* are gloomy Spiders, haunting obscure places, and their garb is dark coloured and dingy in accordance with their habits. They are mostly pale brown, black, dull red, or grey. The *Thomisi* are varied in their colour, in harmony with their usual abiding places. Thus, those that spend their lives among the flowers and foliage of the trees, are delicately and beautifully marked with green, orange, black, and yellow. One species, which I have named *T. virescens*, simulates the vegetation among which it lives, is not agile in its movements, but drops, when alarmed, among the foliage; it is of a pale delicate semi-transparent sap-green, with the eyes and chelicera red; there is a large mark on the surface of the abdomen, beautifully variegated with yellow, pink, and black, and margined with dead-white spots; the under surface is green in the middle and opaque white on either side; the spinneret is pink.

A few observations on the *Periophthalmus*, or Close-eyed Gudgeon, and some other remarkable ichthyological forms which I have noticed in this part of Borneo, may not, perhaps, be altogether uninteresting to some of my readers.

About every group of rocks large numbers of handsomely-coloured fishes play, and dart among the Corallines and Algæ, some with rays of black and orange; some azure with transparent fins; some yellow, others resembling in brilliancy of tint the parrots, the loris, and sun-birds of the forests. Those that live in shallow water are brightly coloured, whilst those dwelling in the high seas, out of soundings, are generally of a dull or sombre hue.

One of the greatest ichthyological oddities one meets with in the tropics, is the close-eyed Gudgeon (*Periophthalmus*). On every slimy bank, among the Mangrove swamps, and on the muddy borders of ditches, the curious eye will detect the shiny, uncouth form of this grotesque, amphibious fish, jumping about like a frog, or sliding awkwardly along on its belly, with a gliding motion. It is equally at home on the "beached margent of the sea," where it is seen skimming along the surface of the water, or jumping and leaping from stone to stone. By means of its pectoral fins it is enabled to climb, with great facility, among the tangled roots of the Mangroves, where it finds a goodly harvest of minute *Crustacea*. Crabs and worms do not, however, constitute its only food, for I have found in the stomachs of some I examined, insects in both the imago and larval state.

The sailors call the *Periophthamus* "Jumping Johnny", and appear very much amused at its wary cunning, and surprising efforts to escape capture. I have, however, seen parties of Dyaks pursuing the larger species over the wide mud-flats, and capture them with the greatest dexterity. Many other fish, besides the *Periophthalmus*, have the same power of living for a time out of their native element, among which may be mentioned *Ophiocephalus*, *Macropodus*, *Helostoma*, *Anabas*, and *Calyacanthus*. Pliny was aware of this fact, which he thus alludes to, "Quin et in

Indiæ fluminibus certum genus piscium, ac deinde resilit."*

Another very singular little fish is the Fighting-fish, which is kept in vessels of water for the amusement of the Malays. If irritated, it immediately changes colour, passing through shades of the most varied and brilliant tints. When two of them meet, they fight with the bitterest animosity, darting at each other with the swiftness of thought, the victor frequently killing his adversary. They feed on small flies and worms, and are easily preserved in glass vessels. A curious species of *Blenny* is very common on the coast, hiding in the deep cylindrical holes in the shallow pools left at low water, at the orifices of which they may be observed protuding their obtuse noses, and tentacular filaments, using them as a decoy or bait like that famous angler the Fishing Frog (*Lophius piscatorius*). The small fry swimming past these tempting lures, are attracted towards them, when the hidden *Blenny* suddenly darts upon them with the greatest velocity, and drags them into its den, there to consume them. So excessively cunning, active, and wary, is this little *Blenny*, that all my endeavours to procure a specimen proved unavailing. On the 31st of August, 1843, while on board the Brig 'Ariel', then lying off the mouth of the river of Borneo, I had the good fortune to hear that solemn aquatic concert of the far-famed Organ-fish, or "Drum", a species of *Pogonias*. These singular fishes produce a loud, monotonous, singing sound, which rises and falls, and sometimes dies away, or assumes a very low drumming character, and the noise appears to

* Hist. Nat. Lib. IX. C. 35.

proceed mysteriously from the bottom of the vessel. This strange sub-marine chorus of fishes continued to amuse us for about a quarter of an hour, when the music, if so it might be called, suddenly ceased, probably on the dispersion of the band of performers.

The peaceful avocations of the student of nature, when engaged in active service, may sometimes be interrupted by disastrous events, an example of which I shall here relate; nor is it the only instance in which, in my capacity of Assistant Surgeon, I have been a party concerned. The incident I allude to, occurred one night during one of the most tremendous storms I have witnessed in Borneo, while the 'Samarang' was anchored off the Santubong entrance of the Sarãwak river. The horizon was overcast long before the storm burst forth, and a portentous lowering gloom gathered in every direction, but when the rain came down in torrents, and as it does only in the tropics, the sky was like an universal pall, spread out over nature, or a hugh black curtain, shutting out the stars of heaven, illumined only now and then by vivid and continuous flashes of forked lightning, followed by terrific peals of thunder, which seemed to shake the earth.

The surface of the ocean was violently disturbed, and lashed into foam by the driving gale, and on the shore the lightning had struck a huge Casuarina tree, under which our carpenters, who were cutting wood here, had erected their tent, and had fallen and crushed a poor Dutchman, as he lay on the sand at its root. On my proceeding in the barge to his assistance, the fury of the sweeping blast throwing the spray about, contrasting with the tossing of the dark forest trees, formed a wild and most magnificent scene. The poor man was so dreadfully mangled as to be beyond the aid of surgery, and expired shortly after my arrival at the spot.

Many of the rivers of Borneo have low, swampy banks, over-hung sometimes by the dark foliage, twisted branches, and snake-like roots of the Mangrove, or fringed on either side by dense clustering masses of the elegant and useful Nipa Palm (*Nypa fruticans*). On the ebbing of the tide there is, moreover, a margin of soft and slimy mud, abounding with various Crustaceans, some of a beautiful blue colour, which live in holes, and, hopping about on their pectoral fins, are the *Periophthalmi*. *Neritina crepidularia* adheres to the petioles of the Nipa leaves, *Cerithium truncatum* to the foliage, and now and then the plunge of a *Hydrosaurus* may startle the observer. On one occasion I observed a Crocodile extended quietly on his belly in the soft mud; I stood still, watching him as he lay extended in listless ease, with his long, lank jaws, and dusky-brown, scaly skin, in bold relief against the mud, and as he turned his head slowly and espied me with his dull lurid eye, he bent his nose close to the surface of the ground, lashed his compressed tail from side to side, and wallowing, retired into the dark still waters. One of these reptiles was in my possession alive, but as the Dyaks had firmly secured his jaws with a rattan muzzle, there was little to fear from his ferocity. He was very soon, however, offered up as a victim on the altar of science.

The novelty of Mr. Waterton's exploit, of riding upon a Cayman's back, is not quite so great as many people imagine. Pliny relates that the *Tentyritæ* were in the habit of jumping into the river Nile, and riding on the backs of the Crocodiles, and when, moreover, these savage *Saurians* turned their heads for the purpose of biting their unwelcome burden, the ingenious riders placed a stick in the mouth and held the ends with their hands, thus bringing the vanquished reptile to the shore, as if with bit and bridle.

In the course of an excursion up the Sarăwak river, in company with Sir Edward Belcher and Mr. Brooke, I found a large and very singular flower, growing in a dark damp forest, on the side of a hill, not far from the mountain of Serambo, in Borneo. It sprung from the exposed root of a tall tree with large light green leaves, in the manner of some gigantic epiphyte or rhizanth. The flower was about sixteen inches in length, of a hard, dense consistence, and of a light reddish-brown colour, deepening towards the summit. The buds were like the full-blown flower in appearance, of the same dirty red colour, but closed at the upper extremity. Travelling through the forest on foot, and requiring to undergo considerable fatigue, I was enabled to preserve or more minutely examine this vegetable wonder. I carried it to the village, where it did not appear to excite much interest, and after making a rough sketch of it, I abandoned it to its fate; I simply allude to the fact here in the hope that another botanist, more fortunate, may fall in with the plant again, and make it better known.

My opportunities of observing the habits of the mammiferous animals of Borneo, were neither very numerous or favourable. I may, however, mention a few peculiarities in the economy of some whose acquaintance I cultivated, which may, perhaps, serve to amuse the reader. A Musang, as the Malays term it, (*Viverra musanga*) during the time it was in my possession, afforded much amusement, and deserves honourable mention at my hands. In many of his manners he resembled the *Mangusta,* or Indian Ichneumon, placing his nose low, and trailing his tail along the ground. When annoyed, however, he arched his back, bristled his hairs, and dilated his tail in the manner of an angry cat, and would spit and bite very severely. He would also gambol like a kitten, and bite the fingers gently with his sharp white teeth. He climbed with great facility, and was perfectly at home among the rigging of the ship. He was an inquisitive and cunning little animal, ferreting out everything edible, rifling the messes of the seamen, especially their sugar, and sucking the eggs belonging to the stewards. For these petty thefts he has been flung over-board several times, but swimming with ease and rapidity, he ascended by the rudder-chains, shook himself, and resumed his ordinary peculations. On one occasion an enemy having thrown him into the sea, a friendly cook gave him a rope, when he climbed nimbly inboard, and was saved. One ill-fated day he ventured into the holy precincts of the Captain's cabin, in pursuit of a rat, overthrew some bottles, and shortly afterwards, being detected in the yet more heinous offence of stealing the Captain's Pigeons, his death-warrant was signed, and he was accordingly executed by the sentry of the galley.

As an instance of the poor Musang's cunning, I may mention that he was observed to descend into a boat, purloin a Banana, quietly stow it among the booms, and repeat the process till he had accumulated a pretty large store, when he leisurely commenced consuming the grateful fruit till not one remained.

On my last visit to Sarãwak, my friend Ruppell presented me with two live specimens of the slow-paced Lemur (*Stenops tardigradus*). They are stupid, quiet, gentle, little quadrumanes, with beautiful, soft, woolly fur, and enormous black eyes. Their common cry is a peculiar, faint, wailing sound, but when angry, they make a chattering noise. They are quite torpid during the day, but tolerably active after nightfall. The female gave birth to two young ones, very helpless little creatures, which clung tenaciously to their mother's soft fur, in any position, sometimes on the sides, and often under the belly. Both the parents and young ones, however, soon went the way of all pets, and their dried skins are the only evidence of their former existence.

I have often observed the Wou-wou (*Hylobates leucisus*) in its sylvan haunts, and unlike the *Hylobates agilis*, which M. Dauvancel says is shy in its habits, it will hang suspended by its long arms, and swinging to and fro in the air, allow you to approach within fifty yards, and then suddenly drop upon a lower branch, and climb again leisurely to the top of the tree. It is a quiet, solitary creature, of a melancholy, peaceful nature, pursuing a harmless life, feeding upon fruits in the vast untrodden recesses of the forest, and its peculiar noise is in harmony with the sombre stillness of these dim regions; it commences like the gurgling of water, when a bottle is being filled, and ends with a loud, long, wailing cry, which resounds throughout the leafy solitude to a great distance, and is sometimes responded to from the depths of the forest by another note as wild and melancholy.

I saw the Galugo (*Galeopithecus*) both in Borneo and Basilan in a wild state. It is crepuscular, and hangs suspended during the day to the under surface of boughs in the tops of high trees. When it moves, it seems to shuffle and scramble among the leaves, and sometimes drops suddenly from its elevated position. It feeds on leaves, and the stomach of one I examined was filled with remains of the foliage of *Artocarpus*, and other trees. The Spanish Officers at Basilan shoot large numbers of *Galeopitheci* for the sake of their beautiful skins, though in an excursion I made with them we were not able to procure a single specimen. At Sarãwak I had a living *Galeopithecus*, or Fying Fox, in my possession, which was procured on the occasion of felling some trees, in the top of one of which the animal was suspended. It was very inactive on the ground, and did not attempt to bite or resist. Having probably received some internal injury, it shortly died. On examining the body, I found it was a female with young; the embryos, two in number, appeared to have the lateral expansion of the skin as in the adult.

Among the numerous rare and interesting vegetable productions to be found in Borneo, is the "*Daum gundi*," or Monkey-cup of the Malays, the Pitcher plant of the English (*Nepenthes destillatoria*, and other species,). It is a very common plant in the Sarãwak territory, where it may be seen, with its curiously-formed leaves, clinging to the trunks and foliage of the trees that fringe the banks of the rivers, or in the interior of the forest. The *Nepenthes* has been frequently and well described, but as I have seen it growing in dense masses, in every stage of developement, a short notice of this very remarkable plant may not be found uninteresting. Besides the *N. destillatoria* I have observed another species, particularly common on the Island of Moarra, near the mouth of the river of Borneo. This kind has narrower leaves, is a smaller plant, but climbs in the same manner, and has small, long, narrow pitchers. Both species are slender twining plants, chiefly supported by the shrubs that grow around by the twisting of the stalks of the pitchers. The flowers are simple perianths, consisting of four sepals, of a brick-red colour, with a yellow stigma, arranged in terminal spikes, which grow upright and crown the summit of the plant. The young plants have only the round, gibbose, and fringed pitchers. There are two kinds of pitchers in each species, one growing at some distance from the ground, which is long, slender, and usually green, or marbled, spotted at the mouth only, and furnished with a very long foot-stalk; the other kind is formed of the lower leaves, and is generally placed upon or near the surface of the ground. These latter Monkey-cups, as the Malays term them, are most generally half-full of insects, chiefly ants. The pitchers, when full-grown, almost invariably contain fluid, in different proportions. In some cups there is nearly an ounce, in others only a few drachms. Many of them contain insects, which if not killed, find it difficult to escape out of the limpid and musilaginous liquid. In one pitcher I found five crickets, hundreds of small ants, mostly dead, and numerous larvæ of mosquitoes and other gnats. The cups near the ground frequently contain living larvæ of dipterous insects; while the young and elevated cups are free from them, and contain pure limpid water. The appearance of these beautiful and delicately-formed vegetable vases is extremely interesting and singular as they hang suspended by their fragile handles, offering a cooling draft to the different animals that frequent the neighbourhood. By pouring the water of several dozens of pitchers into one of large size, I have several times succeeded in quenching my thirst with a good half-pint. Many of the full-sized cups will hold *considerably more than a pint.*

In an account of Balambangan, by Lieut. James Barton (‘Oriental Repertory,’ vol. ii.) there is a very amusing statement respecting this plant. He observes, “The northern part is over-run with various species of the *Nepenthes*; but whether the abundance of water is derived from thence, or whether they be the consequence of the abundance of water, must be left to the decision of naturalists! some caution”, he adds, “may be prudent in rooting them up, lest the former should be the case.” Many other plants are furnished with pitcher-shaped leaves besides the *Nepenthes*, as the *Cephalotus*, of New Holland, the *Sarracenias*, or Side-saddle flowers, and the *Dischidia Rafflesiana*, which I have found growing in the forests of Celebes, climbing about the trees, with its singular leathery pitchers partly filled with a limpid fluid, and surrounded with fibrous roots. In the ‘Oriental Repertory’ (vol. ii.) a kind of cane, called “Tugal” by the natives of the Sooloo Islands, is alluded to, which when cut through, will, it is said, furnish an abundance of clear water, and in the same paper is mentioned a certain creeping plant, termed "Bahaùmpùl", which, on being divided, yields a quantity of slightly gummy water.

Although forest-scenery, with its luxuriant vegetation has been so often, and so well described, I cannot resist the inclination to give my own impression of those vast and solemn temples "not made with hands", which will, moreover, tend to show the great similarity which exists with respect to the grander and more important features between all primeval forests, whether in the Eastern Archipelago or in the Western Hemisphere.

In the forests of Celebes, Mindanao, and Borneo, besides the eternal ringing song of the shrill *Cicada,* a solitary note is sometimes heard from some high tree-top, or a loud, long whine, from the depths of the dark and sombre forest. The aged trunks are hung with Orchideous epiphytes, and variegated with *Lichens,* while on the humid soil, dark fetid *Fungi,* nauseous, and misshapen, spread their dingy forms. A shy Lizard, scaling a naked trunk, or huge *Blattæ,* running among the dead leaves, will startle you for a moment. The Honey-Bee secures its hoard high in the summit of some leafy bough; the White-Ant builds its cumbrous nest about the knotted roots; and, in among the tangled maze, huge Spiders spin their subtle toils. Here and there, the ground is furrowed by the Wild Boar's snout, or, where the Mangroves spread their roots, painted *Gelasimi,* or Land-Crabs, holding up their one huge pincer, in a manner perfectly ludicrous, though meant to be threatening, are scampering about in all directions. Occasionally you notice one of those silent over-growings of vegetation, where the form of some Titanic tree is strangely distorted, "with knots and knares deformed and old," or some trunk embraced in the python folds of an enormous Creeper. I remember seeing, at Tanjong Datu, a tree, of large dimensions, growing on the top of an enormous granitic boulder, the roots of which, descending in the form of long ropes, buried themselves in the ground, thus supporting the tree in a perpendicular position.

These aberrations of growth, are frequently met with in the tropical forests, where great heat prevails, and the ground is always moist. Although usually dim, and often nearly dark, these woods are sometimes illumined by a transient streak of light "fair vistas shooting beams of day", and on the leaves, where the sunbeams play, showy *Diptera* are to be captured, and, numbers of *Buprestidæ,* with glittering metallic wings. Generally, however, with the exception of the loud song of our merry friend, the *Cicada,* an unbroken silence reigns throughout the forest, which is very solemn and impressive. But as the evening breeze sets in, this silent majesty of the woods is disturbed by the harsh notes of the Horn-bill (*Buceros Rhinoceros* and *Astracius*), the screaming of Loris, and the chattering of Monkeys in the trees. The wood-paths are become instinct with life, and now is heard the whistle and the song, the shrilly cry, and gurgling, mellow sound, the loud shriek, and all the varied notes of the "plumy people of the grove."

More particularly during the period of the immersion of our good ship, had I an opportunity of examining some of the peculiarities of tropic scenes and scenery, and what particularly reminded me of our novel position, were certain remarkable differences in the natural phenomena at the close of day, between Sarãwak in Borneo, and Hampshire in England. In England, for example, the bats are on the move, dashing wildly under the foliage of the trees, but here we see enormous *Pteropi* or Flying-Foxes, soaring high above our heads, with steady, flapping fright; the Mosquitoes begin to sound their shrilly trumpets; the "Chichak" chirps as he darts across the ceiling; the Glow-worms shine; the Fire-flies glitter on the trees; the warty Toad unveils his form, and the *Polydesmus* and *Zephronia* venture forth to feed.* I remember, on one occasion, while out on an anti-piratical expedition, about sixty miles up the river Linga, being particularly struck with the appearance of a tropical forest by night. On every side, the dim and shadowy trees stood out like ghosts, perfectly still, and lighted up occasionally by dense clouds of Fire-flies; the ground on every side, for many hundred yards, was a watery swamp, giving birth to myriads of Mosquitoes, and slime-bred animals of every description. Occasionally, we were awoke from our deepest slumbers, by the shrieks of wild animals, and the croaking din of innumerable frogs, but more frequently than all, by certain "grey-coated trumpeters", as Milton calls the gnats. I had heard of the body-louse and chigger, the red acarus, and the Sand-fly, but what are they compared with the Mosquito? I remember well on the present occasion exclaiming in a rage, "Ah! infernal Mosquito! when 'thy shrill horn its fearful larum flings', driving all sleep from weary eyes, and making the night pass away as a long and feverish, fitful dream, surely thou art a demon of the Insect-world". I have seen the faces of myself and some of my messmates, appear in the morning, as if they had the small-pox, their countenances being inflamed, swollen, and covered with white tubercles, and that during a single night! In England, when the sun declines, scarcely a sound echoes to the "dull ear of the night-cradled earth", but in Borneo, as soon as daylight begins to wane, a strange nocturnal chorus fills the air, which continues, without intermission, until the morning. The performers in this chorus of "beings of the night's shadows" are very numerous, and each has a distinct part assigned to him. A subterranean Beetle "opens the ball" from the dark bosom of the earth, producing a loud, continuous, singing noise, made mellow and booming by the winding of his cavern. The Frogs follow up closely this first musical indication, making the swamps resound with their harsh croakings. The mournful note of the Goat-sucker crying out monotonously at intervals, echoes dismally around; the Cicadæ not yet tired with their long day's work make the dim shades resound with their long loud song; the Grass-hoppers, long-legged Choristers, in their merry way, chirp with all their might; one monotonous continued wailing cry uttered by some unknown songster continues the live-long night; now you will hear an interrupted hissing whirring sound from some huge locust; now a loud and silvery chirp; then a soft and gentle sibillant sound; anon a harsh croak, a distant yell, or a low gurgling gutteral cry.

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* A new species of *Polydesmus* from Borneo in the British Museum, I have named *P. Newporti* after Mr. Newport, who has particiuliarly devoted himself to the study of the Myriapoda. A new and large species of *Zephronia* in the same collection, and from the same island, I have named *Zephronia gigas*. I may here inform the less scientific reader, that the first named insect resembles a Centipede, and the latter a Wood-louse more than an inch in length.

The entire symphony, if so it may be called, this "requiem to the day's decline" heard at a distance reminds one of that peculiar sensation termed a "ringing in the ears"; there is no cessation, no rest, no respite; still the noise continues, sometimes growing louder, then drooping and dying away, then bursting forth again as if with renewed enegy; in fact, I believe each performer tries to emulate the others, giving out great impulsive strains at intervals.

Twice was the midnight tranquility of "Cockpit Hall" disturbed by the visits of a Porcupine, that was accustomed to wander in a half-tame condition about the jungle in the neighbourhood, and as these night alarms afforded us some amusement, I shall relate them to my readers. Our house, like other Malay and Dyak dwellings, was, of course, raised on posts from the ground, the space below being occupied by pigs and poultry. Now it happened, as we slept one night on the floor above, dreadful whirring noises, attended by loud gruntings, and hurrey-skurreyings were heard all about the enclosure beneath the house. Anticipating a hunt, I descended our rude ladder, and, followed by a little volunteer with a lantern, crept through the wicket, but instead of fronting a wild Boar or Cat-of-the-woods, my knife encountered merely the quills of the Porcupine, which having entered our premises to forage, could not easily find his way out again. On another occasion, we were awoke by strange, unearthly noises, somewhat resembling the grunt of a hog, mingled with sundry guttural and wheezing notes, gradually approaching our quarters from the jungle at the back. A small hunting party was soon organized, and sallied out in chase. The sounds grew nearer and nearer, when suddenly, a rustling noise was heard, the bushes shook, and out rushed the object of our alarm, in the shape of a Porcupine! These animals, like Hedgehogs, appear to be almost entirely nocturnal in their habits, and I had no idea that the quiet creatures one sees in Menageries, were in the practice in a wild state, of making such hideous noises, and of trotting about with so much animation. On another occasion, a reptile, described as a gigantic *Iguana,* having been seen in the neighbourhood of our dwelling at Sarāwak, I was anxious to procure it, as I conceived it must be a large species of *Hydrosaurus,* or Lace-lizard. For this purpose, I watched two days by the side of a spring, which I fancied the reptile would select as his head-quarters during his stay in our neighbourhood, this being a peculiarity of these creatures, and on the third day, sure enough, he came, trotting leisurely along, and stretched himself at full length on the brink:

> "Nunc etiam in gelida sede lacerta latet".

Throwing myself on him, I wounded him with a clasp-knife in the tail, but he managed to elude my grasp, and made for the woods. I succeeded, however, in tracking his retreating form, on hands and knees, through a low, covered labyrinth, in the dense undergrowth, until I saw him extended on a log, when leaving the jungle, I called my servant, a Marine, who was shooting specimens for me, and, pointing out the couchant animal, desired him to shoot him in the neck, as I did not wish the head to be injured, which he accordingly did. Entering the jungle, I then closed with the wounded Saurian, and, seizing him by the throat, bore him in triumph to our quarters. Here he soon recovered, and hoping to preserve him alive, to study his habits, I placed him in a Malay wicker hen-coop. As we were sitting, however, at dinner, the black cook, with great alarm depicted in his features, reported that "Alligata get out his cage." Seizing the carving knife, I rushed down, and was just in time to cut off his retreat into the adjoining swamp. Turning sharply round, he made a snap at my leg, and received in return a "Rowland for his Oliver," in the shape of an inch or so of cold steel. After wrestling on the ground, and struggling through the deserted fire of our sable cook, I at length secured the runaway, tied him up to a post, and to prevent further mischief, ended his career by dividing the jugular. The length of this Lizard, from actural measurement, was five feet ten inches and a half.

These gigantic Lizards (*Hydrosaurus giganteus*) are rather shy and reserved in their habits, and not very agile in their movements. They affect a swampy habitat, frequenting the low river banks, or the margins of springs, and although I have seen them basking on rocks, or on the dead trunk of some prostrate tree, in the heat of the sun, yet they appear more partial to the damp weeds and undergrowth in the vicinity of water. Many, indeed, are pre-eminently aquatic, as I have noticed in the rivers of Celebes and Mindanao. Their gait has somewhat more of the awkward lateral motion of the

Crocodile, than of the lively action of the smaller Saurians. When attacked, they lash violently with their tail, swaying it side-ways with great force, like the Cayman. These modern types of the *Mososaurus* and *Iguanodon* have a graceful habit of extending the neck and raising the head to look about them, and as you follow them leisurely over the rocks or through the jungle, they frequently stop, turn their heads round, and take a deliberate survey of the intruder. They are by no means vicious, though they bite with severity when provoked, acting, however, always on the defensive. On examining their stomachs, Crabs, Locusts, Beetles, and the remains of the *Periophthalmus*, or Jumping-Fish, the scales of Snakes, and bones of Frogs and other small animals were discovered. Like that of the *Iguanæ* of the New World, the flesh of these Saurians is delicate eating; I can compare it to nothing better than that of a very young sucking-pig.

At the island of Mayo we landed amid the surf, upon a group of high, bare rocks covered with *Chitons*, *Littorinæ* and *Nerites*, with large painted *Grapsi* running about in all directions. As I climbed the rugged acclivity, a huge Monitor Lizard, upwards of five feet in length, disturbed in his noonday siesta, made off to a swampy ravine on the other side, climbing the perpendicular ascent with awkward activity, and stopping now and then to look round and examine his pursuer. The romantic chine in which he finally disappeared was abundantly supplied with trickling rivulets, that came tumbling down among enormous boulders, from their sources in green clumps of tall *Pandanus* trees, springing from the height above. The specimen of *Hydrosaurus giganteus,* from the north coast of New Holland, in the British Museum, is seventy-eight inches in length. Many African species, as, for example, the white-throated *Regenia* (*R. albogularis*) and the Nilotic *Monitor* (*M. Niloticus*), also attain a great size. How admirably adapted are these semi-aquatic, dingy-hued Saurians to the hot, moist swamps and shallow log-laden lagoons that fringe the rivers of this densely-wooded island! The imagination is carried back, while contemplating the dark forms of these *Hydrosauri* plunging and wallowing in the water, or trotting along deliberately over the soft and slimy mud, to that "Age of Reptiles" in the world's infancy, when the vast muddy shores of the primeval ocean were peopled by those lazy lizard-like monsters, and slow-moving giant Efts, the *Mososaurus,* which must have been between the *Monitor* and *Iguana,* twenty-five feet long with a laterally compressed tail; the *Saurodon* with its lizard-like teeth; and the *Dinosauria* and *Megalosaurus,* large carnivorous Crocodile-Lizards. Along the banks of the fresh-water rivulets of Mindanao, numbers of these great water-loving Lizards are seen, plunging and diving in the dark, still streams, basking on the banks, trotting among the foliage, or lying flat on their bellies upon the treees thrown across the rivers and stagnant ponds Among these I think I recognised the two-streaked Lace-Lizard (*Hydrosaurus Salvator*) and another smaller species, entirely of a dull-brown, In the stream that runs through the village of Anjer, in Java, I noticed also numerous Saurians of this group, of somewhat more sluggish movements, most probably *Uranus heraldicus*, and other species closely allied. When wounded, these large Lizards bite very severely, but unless provoked are perfectly harmless. They are easily shot, but it is not without some difficulty they are caught alive.

Among the most active and graceful of the Tree-Snakes to be found in Borneo is the *Dryiophis nasuta*, a slender, grass-green reptile, with a yellow line extending along the sides, and with the muzzle prolonged into a sharp-pointed snout. I had two of these beautiful creatures in my possession, at different times, one from Borneo, and the other from Celebes. The Dyaks, when they presented me with the Bornean variety, carefully secured in a joint of bamboo, with a cork made of rolled up leaves, considered it to be highly venomous, and were greatly surprised at observing me playing with, and teazing it, most probably confounding it with a green species of *Megæra*, which is poisonous, and which I have also seen in Borneo. The *Dryiophis*, however, is perfectly innocuous, and is, to boot, one of the most graceful reptiles that glide upon the ground; Satan might have assumed its form when he courted the notice and admiration of our common mother. It is a very active and playful Serpent, and feeds on Grass-hoppers, Ants, and other insects, which it seizes, with the velocity of lightning, frequently darting out its long, black, forked tongue, before making the final spring. A party in one of our boats, proceeding up the Sarāwak river, encountered a large black-coloured Cobra (*Naja Tripudians*), seven feet long, making his way through the water with his head slightly raised, and his tongue protruding. He was immediately attacked, wounded, and, after much struggling, hissing, and many contortions of the body, finally secured, and brought up for my inspection.

During our residence at Sarãwak, a very handsomely variegated *Python*, about fourteen feet in length, was detected in the act of devouring a chicken, beneath the boards of Mr. Brooke's house. A party, headed by the gunner, armed with boarding-pikes, soon wounded the reptile, and secured him. When brought to me, he was apparently in a dying condition, so, after admiring the beauty of his spotted skin, I fastened him to a post in my friend Ruppell's room. During the dinner-hour, however, he had recovered himself, slipped the noose over his head, and escaped, no one knew whither, and all our searching after the beautiful snake was unavailing. During a visit to Sarãwak, in September, 1844, Ruppell informed me that many months afterwards, on some stores having been removed, the same Python was discovered, comfortably coiled up under some bags of rice. No half-measures were pursued this time by his merciless captors; he was transfixed with spears, his head cut off, and his skin preserved as a trophy. He measured, after death, fourteen feet in length. Before the search was made, several fowls and pigeons were found lacerated, and half-dragged under the house. A party of Songi Dyaks, from Serambo, having occasion to make a journey to Sarãwak, encountered a *Python* on the banks of the river, thirty feet long; they succeeded in killing it, and tied its head to a tree on the river's brink. The day before our trip to the Antimony and Gold Mines, it was seen extended across the river, secured to the trunk of a tree, but when we passed the spot, it had unluckily been washed away by the freshes that rush impetuously from the mountains, at certain times, and overflow the banks. *Pythons*, or Boa-Constrictors as they are commonly called, of an enormous size, are reported to have been seen in the interior by the Dyaks. On one occasion, a large dark-coloured snake was observed by the natives swimming down the river, when they gave chase. They soon overtook the reptile, and killed it by repeated blows on the head with their paddles. This serpent, which was presented to me, measured seven feet long, was innocuous, and had a compressed form and a dorsal crest, extending the whole length of the body. I pursued a similar serpent, that surprised us when bathing, but did not succeed in capturing him. A curious circumstance occurred at Siniavin, showing the dread entertained by the Malays against the serpent race. Taking a stroll before breakfast, behind the village, I perceived a very prettily-marked snake, at the bottom of a small, shallow pool of water, and stooping quietly down, impaled the reptile between my finger and thumb, and thus succeeded in making him my prisoner. On my return, after showing my prize to the party, in order to elicit proper admiration of its black and red mottled skin, I proceeded to the river's brink, for the purpose of securing the animal in an empty stoppered bottle, which, according to custom, I had brought with me for zoological contingencies, like the present. The serpent being safely lodged in "durance vile," I was rather surprised, some little time afterwards, at seeing a great commotion among the "Tambang-boys," and my curiosity prompting me to investigate the cause of their leaping precipitately into the water, and evincing other signs of excitement and alarm, I soon ascertained that the awkward movements of Sooboo, Mr. Brooke's coxwain, as he was engaged in clearing out the boat, had broken the bottle, containing the captive snake, and that no sooner had the men caught a glimpse of his gliding form, than they, one and all, rushed tumultuously over the side of the Tambang into the river, while the serpent, soon following their example, swam peacefully to the opposite bank, and found a safe retreat among the dense, weedy mass that fringed the river. Sooboo afterwards informed me, that the species of snake I had captured in the morning, was considered by the natives, one of the most venomous in the country.

The *Polychrus virescens*, like the Chamelion, changes its colour, assuming various hues, which are dependent on rage or fear When first captured, and trembling in the hand, it throws off its bright green mantle, and assumes a coat of sober russet-brown, which is sometimes varied with lighter spots; frequently it remains of a fine emerald green on the belly. It is the "Gruning" of the Malays, and probably the "Chameleon" that Marsden mentions, as being common in Sumatra. It hunts for insects among the foliage of the trees, and is fond of travelling out to the end of a slender branch, to watch the Diptera, as they wheel in circles by. I always found their stomachs loaded with insects. The Gruning bites very severely.

The "Tokè" of the Malays, is a very common lizard among the "attap" dwellings of the Dyaks. It feeds on beetles, and other insect-forms that find a home in holes of rotten wood. It emits a peculiar chirping sound. The eggs are somewhat smaller than a wren's, and are concealed in damp and rotten logs. The young, when first excluded, are of a bluer tinge than the mother-reptile, and begin to crawl immediately on their expulsion from the ovum.

The House-Lizard, or "Chichak", of the Malays, (*Ptyodactylus Gecko*) is common. During the day it conceals itself from view, and towards evening, runs across the rafters, emitting its sharp, chirping note. On one occasion, I was much amused with a struggle between one of these domestic reptiles, and a large tarantula spider. The Chichak proved victorious, and succeeded in swallowing the insect, whose enormous legs, protruding from the lizard's mouth, gave the compound animal the aspect of some wondrous Octopod.* The natives are fond of the "Chichak," permitting it to harbour in security, for it clears their bamboo-dwellings of Spiders, Scorpions, Centipedes, and other vermin.

The Grass-Lizard (*Tachysaurus Japonicus*) is a slender, graceful reptile, of the most brilliant green, with a yellowish stripe on either side, and a tapering tail, four times the length of the body. It is found among the high grass, and in dense brakes, where the flowers are thickest. Here light, elegant, and sprightly, it preys on flies, and Orthopterous insects, which it captures in a most expert and dexterous manner. I have met with it also among the Korean Islands, the Meia-co-shimahs, and at Sama-Sana Island, in the China Sea.

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* Pliny records the fact, however, that spiders are in the habit of capturing small Lizards, first entangling them in their webs, afterwards destroying them with their jaws, a spectacle, he observes, worthy of the amphitheatre!

The large Brown Lizard is common in Hong-Kong, Korea, and in Borneo. When caught, it bites severely. It is a ground Lizard, and is very active, preying on insects of various kinds. The Malays call it "Biñgkarong." I have seen, while lazily reclining under the cool shade of the trees on the small Island of Burong, this large brown Lizard very attentively watching by the side of a populous Ant-hill, and, as the unsuspecting inhabitants came forth, in regular columns, as is their wont, he would lick them up, with a complacent shake of the head; looking about him, at the same time, in a knowing manner, with the fore part of the body raised high upon the legs, and his long tail undulating gently from side to side. Many thousands of the population of their city were, doubtless, consumed, in the course of an hour, by this fearful dragon without their walls.

I have observed the Fringed Tree-Gecko (*Ptychozoon homalocephala*) ascend the stems of trees with considerable agility, feeding greedily on the *Termites* that march in swarms up and down the trunks, but I fancy the observation of Boie, that "they use the expansions on their sides as a parachute," to be incorrect. I have seen them cling to the smooth stem of a Palm, and remain for a long time perfectly motionless. They appear to court the shade, and owing to their assimilating in colour to the bark, they are not easily to be perceived, even by the eye of the naturalist. They are certainly not aquatic, as M. Cuvier once imagined. In the young animal, the membrane is corrugated, and as if shrivelled up, although it is not rudimental, and, in some specimens, the free margin of the mouth is entire, while in others, it is scalloped, and irregular.

The *Uroplates fimbriatus,* another curious little Lizard, with the tail edged with a thin membrane, is also found in Borneo. I have caught it as it was running up and down the stems of the *Areca* palm, and I have seen it, also on the *Papyia.* This fimbriated *Gecko* is about the same size and colour as the common varieties of the *Ptyodactylus* that frequent houses, and is likewise a native of the island of Madagascar. One of the most beautiful Lizards I have met with in Borneo, is the *Tachydromus sexlineatus,* which is elegantly marked with white and black streaks and spots. It is generally found in sunny places, among dead leaves, and is astonishingly active. Before I take leave of the Bornean Reptiles, I must say a few words about the *Dracunculus quinquefasciatus.* This tiny, painted Dragon of the East, the Flying Lizard of the Woods, is fond of clinging with its wings to the smooth trunks of trees, and there remaining immoveable, basking in the sun. When disturbed, it leaps, and shuffles away in an awkward manner. One I had in my possession, reminded me of a Bat, when placed on the ground. Sometimes he would feign death, and remain perfectly motionless, drooping his head, and doubling his limbs, until he fancied the danger over, then cautiously raising his crouching form, he would look stealthily around, and be off in a moment. It consumes flies in a slow and deliberate manner, swallowing them gradually. The eggs of the Lined Flying-Dragon (*Dracunculus lineatus*), which I have examined in Borneo, are white, and much smaller than those of the Golden-crested Wren. They are joined together in the manner of those of a Snake. The inclosed young have the lateral membrane fully formed. The eggs are found among decayed vegetable matter, and under the loose bark of trees.

The Banded-Head Dragon (*Dracunculus ornatus*) is a native of the Bashees, as well as of the Philippines, but I do not remember having seen it in Borneo.

CHAPTER III.

BASHEE AND MEIA-CO-SHIMAH GROUPS.

Macao—Its appearance from the Roads—*Batan*—A Marriage Feast—Rejoicings over the Dead—Exhibition of the Magic-Lanthorn—Appearance and Dress of the Women—Vegetation—Insects—Anecdote of a Spider—Pirate-Crabs—Story about a Land-Crab—Beautiful Molluscous Animal—Singular Crustacean—Sea-Eggs Star-Fish — Red-blooded Worms — Sharks—*Meia-co-shimahs*—Lost in the Woods—Scenery—A natural Amphitheatre—Proposed scheme of abduction—Gratitude of the Natives—Mountain Scenery The Screw-Pine—The Hibiscus, Banyan, Camelia, and other plants—Combination of Temperate and Tropical Forms—Palms—Bamboo—Torches—Edible Cryptogamic Plant—Vegetables—Reptiles—Blue-tailed Lizard—The Diodon—Enormous Octopi—The Kraken—Habits of Cephalopoda—Mollusca used as food—Modes of defence of Mollusks—Enemies of Mollusks—New Genus of Dorididæ — Habits of Crustaceans—Insects—Glow-Worm—The Centipede—The Scorpion—Spiders—Aspect of the Coral-reefs—Zoophytes.

On the 14th of September, 1843, we arrived at Hong-Kong, where we remained till the 29th of October, when we again made sail, and, on the 30th, anchored in Macao roads. Our short stay at this place did not, however, offer much to the notice of the naturalist, and I have already, in the body of the work, alluded to the busy appearance of the streets, and paid my humble tribute to the famous Cave of Camoens. I shall therefore, after briefly alluding to its appearance, from the water, proceed on to the Bashee Group. Macao offers a somewhat interesting sight when seen from the anchorage in the roads; the heights of the mountains, Charil, and Nillan, are crowded with forts and hermitages, and stretching along the water, the broad quay, or landing-place, (Praya grande,) shows a row of neat and airy houses. Two churches, and numerous monasteries of Capuchin, Augustin, and Dominican Monks, and one female convent, that of St. Clare, (rather curiously dedicated to the Conception of the Mother of God) ornament the city, and relieve the monotony of Chinese Bazaars, &c. The greater part of the population consists of "Mesticos," or a mixture of Chinese, Malay, and Portuguese.

On the 2nd of November, 1843, we left Macao roads, and on the 12th, arrived at Batan, where we remained till the 27th, and partially surveyed the group. Since that, several other visits, in February, 1844, in March, 1845, and in May and November of the same year, have enabled me to make a few observations, which may not be unacceptable or uninteresting. I remember on one occasion, being very much amused at a wedding-feast at which I was present, and as it exhibits a few peculiarities of the habits of these Islanders, I shall shortly describe it. The marriage-feast consisted of raw pork, finely chopped up, Yams, and Sweet-Potatoes, not omitting large quantities of their national beverage, the abominable Bashee. The ground was their table, their plates were torn from the Arum and Banana, "cujus folia instar patinæ natura formavit," as Rumphius would observe, and their fingers the knives and forks. After cramming their bodies with this, to us, indigestible collation, they adjourned to the dancing-room, a large shed-like building, where, to the sound of a fiddle, the only one in the island, they achieved a variety of extraordinary dances, not generally known among the "*Corps de ballet*," or others learned in the Terpsichorean mysteries. I had the honour of leading off the first set with the bride, and our performance appeared to give universal satisfaction; and soon the noise, chattering, and merriment would have done honour to a Christmas party in the rural parts of our own dear "Merrie England."

When a person is dangerously sick, and not likely to recover, his friends all leave him, and the house is carefully closed; the same custom prevails when a woman is in the pains of labour. Should the person die, a large pig is killed, and placed by the side of the deceased, and eating and drinking take place among the friends and neighbours, who assemble together for the express purpose; the whole proceeding reminding one exactly of an Irish wake, with the exception, perhaps, that the "Keeners" are not quite so accomplished and noisy.*

At the village of St. Carlo, in Batan, the evening exhibition of the magic-lanthorn gave great satisfaction to the native Indians, who came attired for the occasion in their best habiliments, and even those spectators of the fairer sex were more decently covered than is their wont, and all assumed the most modest and well behaved deportment. Bursts of unrestrained merriment occasionally uprose, as some ridiculous phantasm, more fantastic than ordinary, met their wondering eyes. The short lace jackets, partially veiling, but not quite concealing the bosom, the sarong, tightly fitting about the hips, and the small bare feet, with the tips of the toes resting in little embroidered slippers, set off the well-made, symmetrical forms of the young girls, many of whom were really pretty.

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* Marsden, in his 'History of Sumatra', alludes to a similar practice among the natives of that island. Referring to their funeral rites, he observes: "On this occasion, they kill, and feast on a Buffalo, and leave the head to decay on the spot, as a token of the honour they have done to the deceased, in eating to his memory;" and again, "the women who attend the funeral make a hideous noise not unlike the Irish howl."

Among the plants that grow wild in these islands, is the *Datura tatula*, an aromatic *Absinthium*, much valued as an anthelmintic and stomachic by the natives; an aromatic plant, very much like the *Teucrium Scorodonia*; a species of *Lamium*, with large showy purple flowers; the red and yellow-flowered *Canna*; the *Spondias dulcis*, and *Ebony* (*Diospyrus melanoxylon*); the Sweet-scented Violet (*Viola odorata*), a very palatable mountain Raspberry, the Castor-oil plant, and *Convolvulus*.

The insects which appear to be most common among the Bashees belong to the *Rhynochophora* and *Chrysomelidæ*. Small jumping beetles, *Halticæ*, commonly known by the name of "Garden Fleas", are very numerous, as are several *Scutelleridæ*; one *Callidea*, in particular, with a purple thorax, and light-green elytra, with black spots, is a very common insect. In some parts, the leaves are covered with innumerable larvæ of a handsomely-marked species of *Cassida*, all of them being concealed under little tents, formed out of their own excrement. A *Cercopis*, with an orange head and thorax, and black elytra, covered with orange spots, is common among the leaves in sunny places, and a velvety *Laguria*, with metallic-looking, green, punctulated wing-covers, is frequently seen pitching for an instant on the surface of the leaves, and taking flight again with the greatest velocity, having more the habits of some active dipterous insect than of a beetle. A small green *Mantis* is not uncommon, crawling among the culms of the long, rank grass.

In these islands I have noticed a large species of *Nephila*, which appears undescribed. The thorax is covered with a silvery pubescence, the abdomen has nine bright-yellow spots; the shanks of the first pair of tibiæ have a broad yellow band, and those of the posterior tibiæ, and penultimate joints, at their proximate ends, have a similar band. The rest of the body and legs is black. It forms a large, strong geometrical web. I have named the species *N. xanthospilota*.

The larvæ of the *Cryptocephali*, which abound here, form hollow, flattened cases of the comminuted cuticle of the leaves of the Sea-Convolvulus, and may be seen crawling about by hundreds, like the larvæ of *Cassidæ*. When, however, they are about to undergo their metamorphosis, they adhere firmly to the upper surface of the leaves, by means of a glutinous secretion, which is insoluble in water, and thus prevents their being washed away by the rains.

Under the decayed bark of trees I noticed, near Santa Ivanna, numbers of a species of *Chelifer*, running up and down the trunk, like so many pigmy Scorpions.

Among the Bashees, Spiders, of the genera *Nephila* and *Acrosoma*, are numerous. There is one very large and handsome species of the latter genus, which has a strange habit, when alarmed, of suddenly erecting the second pair of legs, with a rapid, jerking motion: while, at the same time, he gathers together all the other legs, and shakes his web violently, in order, apparently, to intimidate his adversary, or, perhaps, to ascertain the strength of his position. If, however, the cause of alarm be continued, he coils himself up, while all his members become rigid, as in death, and then falling to the ground he remains like a small, inanimate, brown ball, until the enemy has departed. His cunning never forsakes him, even in his greatest emergency, for he continues all this while actually to maintain a communication between himself and his web, by means of a fine thread, fixed at one end to the centre of his toil, and at the other attached to the spinneret at the end of his abdomen. By means of this attenuated and invisible cord, he will climb up again when the danger is over, and resume his old pastime of rapine and blood-sucking.

The dry rocks swarm with Robber-Crabs, in their borrowed houses, all very busy and vivacious. These *Paguri*, or "Pirate Crabs," are very numerous throughout the Indian Islands, taking refuge, some in the prostrate bodies of decayed trees, some in the dead leaves and underwood, and some penetrating the verge of the forest, and ascending the *Hibiscus*, and other trees that border upon the sea. Many, again, are littoral in their habits, and others live at great depths. One species was obtained off the Cape, at 230 fathoms, having fabricated for itself a most ingenious dwelling, in the form of a univalve turbinated shell, from an *Ancillaria*, incrusted with an alcyonoid sponge. Others, again, like the *Birgus latro*, live high up the mountains, in holes of rocks, and in hollow trees. Regarding this Pirate, the natives of Batan tell very remarkable stories. They say it utters a sharp cry when caught, that it bites most severely, and defends itself with desperation, that it carries its eyes in its tail, runs with surprising celerity, feigning death when alarmed, and cuts down with its chelæ the young Cocoa-nut trees. From observation, I can say they run swiftly backwards, feign death when disturbed, feed on fruits, and are of immense strength. They are numerous at the Meïaco-shimah Group, where they inhabit holes in the banks among the pine woods. At Cocos Island, they are said to be destructive to the young Cocoa-nut trees. Sir E. Belcher informs me they attain to an enormous size in Pitcairns Island, and that there is a tradition of a woman, after having been cast ashore senseless, from a wreck, being deprived of her babe, by one of these giant Land-Crabs, and who was rescued only by the death of the captor.

The Hermit-Crabs form three large divisions, the *Birgus*, entirely terrestrial, and unprovided with a borrowed protective shell; one (*Cenobita*) which lives in shallow bays, fresh-water pools, or on the borders of woods, near the sea, and which closes the aperture of its dwelling with its left chela, and second left ambulatory foot; and a third-class (*Paguri*), which live at the bottom of the sea, at greater depths, which have foot-claws, elongated and feeble, extending straight forwards, and never closing the aperture of their stolen habitaculum. On being captured, they always retreat to the further end of the shell.

On the little Island of Ibugos, one of the Bashee Group, I had the pleasure of observing the large and handsome *Pleurobranchus testudinarius*, figured in Philippi's 'Enumeratio Molluscorum Siciliæ' (Tab. XX. Fig. 1.), in its native element. It was gliding quietly along, at the bottom of a shallow salt-water pool, near the shore. The cheloniform back of the animal is splendidly variegated with various rich and glowing colours, chiefly ruddy browns, Vandyke, Sienna, and Bistre, with Lake and Indian yellow, relieved by numerous dead white specks. The integument is covered with hexagonal markings, which each rise to a central nucleus, giving to the creature, when in motion, very much the appearance of a diminutive Tortoise. The branchial organs, beautifully lamellated, are arranged in two rows; they are placed in the body-groove of the right side, just above the foot, and are slightly protruded beyond the margin of the mantle. The belly is of a dark slate colour, the gills are purplish, and the appendages of the head of a rich red-brown. In its movements, this Mollusk is slow and deliberate, crawling in a slug-like manner, at the bottom of the water. The chromatogenous vesicles, or cytoblasts of colouring matter, when examined microscopically, were found very large, and well-developed in the soft, coloured skin of this beautiful Mollusk.

On the same flat, weedy beach, there is a peculiar species of *Callianassa*, which digs pits in the sand, in the manner of the Ant-Lion. It is a long, red-coloured powerful Crustacean, and allows the antennæ to be protruded some way from the mouth of its snare, and when the *Ophiuri*, or other animals, come unwarily by, his foot-claws are immediately darted forth, and the victim is dragged forcibly down to be devoured at leisure. The *Thalassina Scorpionoides* lives in holes, in a similar manner on the dry land, but is a weak, inactive creature, and does not seem possessed of the same ingenuity.

Among the numerous interesting marine forms of organic life to be met with among the Islands of the Bashee Group, not the least worthy of note are those Echinodermatous animals, the *Ophiuri*, *Asteriades*, *Holothuriæ*, and *Echini*. Eccentric in appearance, disgusting in their habits, they crawl languidly at the bottom of the sea, always intent on procuring food, consuming voraciously whatever comes in their way, so that they have appropriately been termed the "Scavengers of the deep." The *Ophiuri* affect the shallow weedy sands, which the water never leaves perfectly dry. They are fond of concealing themselves under flat stones, creeping into the anfractuosities of Corallines, or wrapping their bodies in the Algæ that lie around them. They sometimes bury their central discs in the semi-fluid sand, gently vibrating their snake-like arms, and protruding their tubular feet, which latter seem to serve them also as breathing organs. When pursued by an enemy, they move with considerable dispatch, dragging their bodies sideways, by seizing upon the irregularities of the ground with their long, flexible brachia.

A superb *Asterias*, upwards of a foot in diameter, beautifully marked with crimson, and covered with small dark spots, was obtained from the same locality. In deeper water along the coasts of these islands, the dredge furnished us with numerous *Spatangi,* the spines of which, when the animals are alive, have a slow oscillating movement, but they do not serve as such important organs of locomotion, as they do in the *Cidaris* and *Echinus.* The flattened forms of *Echinodermata* are very numerous all over the China Sea, strewing the muddy and sandy floor, and every time the dredge was examined, numbers of *Scutella, Lobophora,* and other forms, were procured; they appear to have less vivacity and perception than even the *Spatangi.* Among the *Echini* procured in this way, was a very handsome species, having bright ultramarine spots in the radial grooves, extending from the mouth to the anus, with spines long, slender, and marked with alternate light and dark rings; others were procured of a delicate rose-colour, and large and splendid *Cidares,* with tuberculated, compound spines, having other flattened spines and narrow calcareous plates in the sulci between the segments, were also noticed among other beauties brought to light by the dredge. The tubular processes which issue from the ambulacral pores in this *Cidaris,* are capable of enormous dilatation, and the sucking discs at their extremities, are possessed of considerable powers of tenacity. I observed the animal after rolling itself along, by means of its spines, assisted by its tubular appendages, the so-called feet, commence leisurely to ascend the sides of the wash-deck bucket, in which I held it captive, nor did it cease its persevering endeavours until it had arrived at the very edge, when, on touching it, the tubular tentacles were withdrawn, the suckers became detached, and the creature fell to the bottom of the vessel. The fact of this locomotion of *Echinoderms* was well known to Pliny, who observes, "sunt echini, quibus spinae pro pedibus."

The *Comatulæ* are very large and of splendid colours, in the Indian Seas. I have figured one gigantic species, the pinnate arms of which are of the most beautiful green, the oval disc being of a bright yellow. The *Comatula*, which is merely a detached *Pentacrinus*, and possibly only an adult form of those pedunculated *Echinoderms*, enjoys a very considerable latitude of motion, and can even raise itself from the bottom, and propel its body through the water by a series of successive jerks, employing the long flexible arms in the same manner as the *Argonaut* and *Octopus*. Both *Comatulæ* and *Gorgonocephali* are very difficult to preserve properly, even if they are first steeped in fresh water.

A species of *Holothuria* is common on the shores of these islands, of a dark black colour, being covered with a thick stratum of pigment, which stains the fingers purple, when the animal is touched. The original aspect of this "biche de mer" is concealed by granules of sand, which entirely cover the large cylindrical body. Its branchiæ are very beautifully fimbriated, and are of a deep purple colour. There is another species of *Holothuria* with a soft brown, tesselated, integument, which, on being touched, after suddenly ejecting the entire contents of its sacciform body, including the whole of the viscera and appendages, through the anal orifice, shrivels up, and immediately dies. Another species is of a brilliant crimson colour, with several rows of bright yellow pedicelli, an ultramarine coloured ring round the oral aperture, and beautiful compound branchiæ, of a pink rose colour. In another species, I noticed that the branchiæ were composed of numerous isolated trunks, beautifully ramified, and all radiating from the crown-shaped anal aperture so as to form, in appearance, a lovely violet star.

The *Sternaspis* inhabits deep water, and was procured by us on two occasions from a muddy floor. It is very inactive in its habits, and when alive moves the spines at one end of the body in an oscillatory manner. It appears to be an animal of delicate constitution, dying and shrivelling up very shortly after being taken. The worm-like *Sipunculus,* which inhabits the loose moist sand, in which it forms rather deep burrows, resembles a gigantic *Arenicola*, to which it also approximates in its habits.

A small species of spotted Shark is rather common along the shore, and appears to be a very active depredator among the shoals of fish that here abound. I made a capture of one of these fish-tigers, which, unluckily for him, had run aground upon a shallow sand-bank. After making surprising efforts to bite his assailant, and regain his native element, he finally became my lawful prize.

Speaking of Sharks, I may here mention a curious circumstance, showing the extreme voracity of these fish, which occurred at Unsang, on the East coast of Borneo. A large species of *Zygæna* sprang from the water, seized a bullock's hide which was drying at the bows of the ship, and succeeded in tearing a portion of it off. One hundred miles from Batan, a shark was caught with a partially digested pig in his stomach, which had been thrown overboard at the anchorage of San Domingo, in that island. Sharks are always, and justly so, detested by the sailors, and they ever experience a certain savage delight in hacking them to pieces with their knives, before life is extinct; and there really is something very unpleasant in the quiet splashings of these voracious monsters, when they are numerous round a ship, and something very revolting in the greedy pertinacity with which they seek the filthy garbage and offal thrown overboard.

Annelides are observed in great numbers along the flat shores of some of these islands. Vermiform, and slow-moving, they mostly exist blindfold, and buried in the sand; while a few are provided with articulated members and move freely about. The *Eunice tubicola* lives in a long horny, transparent tube, within which, strange to say, it can readily turn end for end. The tube is furnished at one extremity with a delicate valvular apparatus, which allows the water to flow but in one direction. The skin of some of these *Annelides* is soft, and covered with a slimy secretion, and I have seen one species cover itself with loose calcareous grains, like the huge dark-coloured *Holothuriæ* of the coast of Ibugos. They, however, appear to be, for the most part, helpless and indolent beings, not possessed of much activity, but vegetating in their dark abodes, leading lives insignificant and obscure. Some few, however, as the *Nais* and *Scyllis*, would seem to repudiate such an accusation, seeing that they enjoy a greater latitude of locomotion, with the possession of senses much more developed. They are very difficult to preserve entire, owing to the facility with which their segments separate when the animals are captured. Although apparently so inert and helpless, in many instances they are provided with means of aggression and defence by no means despicable, consisting in long, sharp, arrow-headed bristles. Many of these setigerous forms, as *Aphrodite*, *Euphrosone*, and some others, prove most troublesome to the zoologist, when examining the contents of the dredge, penetrating the skin by means of their fasciculi of small sharp spicula, and producing the same unpleasant irritating effects as the spicula of some sponges, the hairs of certain caterpillars, and the *Dolichos pruriens*, and many other plants.

On the 27th of November we left the pleasant Batani Islands, and on the 1st of December, arrived at Patchung-san, one of the Meïa-co-shimah Group, and I shall now proceed to offer a few observations connected with the natural productions of these islands, merely premising that the scientific details will be published in another work.

Every one of the party seemed to enjoy himself on the occasion of our survey of this island, and each one had some little adventure to relate which had happened to himself. In one trip, as I was astride a wretched apology for a horse, a most miserable "Rosinante," furnished with heavy uncouth stirrups, a wooden saddle, a preposterous bit, and grass-rope bridle, in hot pursuit after a curious Land-Crab, a most cunning and active species of *Birgus*, I unfortunately lost my way, and wandered about the woods, perfectly "at fault." Trusting, however, to the intelligence of my beast, and thinking he must be better acquainted with the intricacy of the forest-paths than myself, I gave him the reins, such as they were, and allowed him to exercise his own discretion, when, after conducting me through numerous dense thickets; walking with me up rugged, stony, precipitous steps, nearly perpendicular; now stumbling over loose stones, and now half-hanging me, like Absalom, on the branches of the trees; after traversing the beds of shallow, running rivulets, and threading marshes, almost knee-deep in mud, I found, to my great vexation, and regret for equine sagacity, that the foolish animal had, after all, mistaken his road, and had conducted me to the margin of the sea, in a beautiful, wild and desolate spot, with enormous rocks, clothed with verdure, towering around and above me, and huge masses of broken coral strewing the strand beneath. I had not much time, however, allowed me to contemplate the beauties of the scene, or the novelty of my situation, for the jealous vigilance, or polite hospitality as they wished it to be considered, of our friends, the poor islanders, interrupted my reverie, and prevented my being altogether food for the crows. They kindly urged me forward in the right road, and persuading me to quicken my pace, before long, I was comfortably lodged in a temporary house built in a few minutes, for the accomodation of the Captain, on the summit of a hill, surrounded, on every side, with beautiful woods. Here we bivouacked for the night on beds of dry grass, the natives crowding round large fires in the open air, and the mandarins seated on mats, under a shed, smoking their pipes, drinking innumerable small cups of tea, and talking together nearly the whole of the night. Sometimes our path lay along a grassy plain, varied at intervals by huge piles of rocks and stones, overgrown with Vines, and other climbing plants, or masses of dark Pine trees, covering and surmounting the wooded knolls, and furnishing deep shady glades between them. At other times, we would wend our way through miles of sable forest, dark, shadowy, and silent, and filled with nothing but lofty Pines; in our course, ascending precipitous and rocky paths, crossing narrow causeways, or rude bridges over waterfalls; and then again our road would be in open daylight, across broad fields of Sweet-Potatoes, or by the side of "padi" swamps. In Koo-kien-san, we came, on one occasion, suddenly upon a most magnificent natural amphitheatre. From a verdurous plain, covered with the Palmetto Palm, and prickly *Pandanus*, gigantic *Hibiscus* trees, and long coarse grass, huge hills uprose in every direction, their sides densely and beautifully wooded with trees of varied foliage, while here and there a patch of bare red rock, or yellow stratified acclivity would relieve the sameness of the universal green. In many places were ravines with running water trickling down the sides.

To such an extent did I ingratiate myself with these good people, by giving them medicines, and adopting their habits, that, in this same island of Koo-kien-san, a plot was actually laid to carry me off into the mountains, in a rude kind of sedan, with tempting offers of a wife and house, and as much tobacco as I pleased. My services as a Surgeon might have had some influence in bringing them to this determination. Finding, however, all their pressing tenders, and what they conceived tempting offers, of no avail, their chagrin was very manifest, and they contented themselves with dressing my hair in their peculiar fashion, investing me with the silver "Kami-saschi," and placing around me an "eschaw," or robe, then sitting in silence, deplored the resolution I had thought proper to adopt. At one of the villages, an old Chief brought down his infant daughter in his arms, and besought my assistance, as she was afflicted with a tumor in the neck. On my pointing out the course he should pursue, he joyfully returned to the village, and shortly afterwards returned, begging my acceptance of a small present, which consisted of some ground-nuts, a couple of fowls, a flask of "saki," and some Sweet-Potatoes.

In some of the mountain scenes, among the still quiet glens, apart from the villages, there is an air of rude grandeur and magnificence, hardly to be looked for on an island of such comparatively small dimensions as Koo-kien-san. In one part of the island a stream of water falls from a great height, producing one of the highest waterfalls, perhaps, hitherto known; and towering above this, are several tapering peaks, which, seen glittering in the splendour of the setting sun, produce as fine a picture as any Salvator Rosa could have desired. In other precipitous parts, vast masses of rocks, lichen-stained, and overgrown with a wild and tangled vegetation, lie crowded and jumbled together in the utmost confusion, rendering it very rough and difficult work for our small-footed ponies. Although both myself and pony came rolling down one of these precipitous passes, with high banks on either side, yet I would rather trust my neck to the sagacity of these hill-bred animals than to my own pedestrian exertions. In some of these romantic, and beautifully-wooded valleys, a large white-flowered *Convolvulus,* or rather *Calystegia,* climbs among the tangled thickets in the wildest luxuriance, and, mingling its pure blossoms with those of a yellow-flowered *Hibiscus,* produces quite a pleasing effect.

Among the Meïa-co-shimah Islands, I first had the curiosity to taste the fruit of the *Pandanus,* or Screw-Pine, and found it refreshing and juicy, but very insipid. When perfectly mature, however, they certainly look very tempting, and resemble large rich-coloured Pine-Apples. In several instances I found the interior of half-decayed fruits filled with a fermented, subacid liquor, and have no doubt that a decent wine might be manufactured from the pulp. The stones, though very hard, contain a pleasant kernel.

A large yellow-flowered *Hibiscus* grows in vast quantities, offering a most beautiful spectacle in the deep woody gorges of Koo-kien-san. In the young shoots, the spiral vessels resembling spider-webs, could be distinctly seen with the naked eye, on breaking through the green stems. On the open plains, a small *Campanula* with a very flat blue corolla, and a curious flower, with white tufts on the petals, are very common.

In some parts of Pa-tchung-san we passed through large masses of the *Canna Indica,* with red and yellow flowers, sometimes inclining to a deep orange, producing a very beautiful and brilliant effect, and near the villages the *Camelia Japonica* attains the dimensions of a large tree, frequently several feet in diameter, and loaded as it was, at the time of our visit, with handsome red wax-like blossoms, it imparts a very gay aspect to the scenery. Groves of Guava (*Psidium pyriferum*) and a small species of Orange, contribute materially to the same end. In the quiet spots, selected for the interment of the dead, the Banyan

> spreads her arms
> Branching so broad and long, that in the ground
> The bended twigs take root, and daughters grow
> About the mother tree, a pillar'd shade
> High overarch'd, and echoing walks between.
> *Paradise Lost.*

The sugar-cane grows sparingly, and is accounted a luxury rather than a necessary of life. Altogether, there is a strange mingling of temperate and tropical forms, both in the Animal and Vegetable Kingdoms, among these islands. You will find the Violet and the Rose the *Polygala* and the Marygold growing side by side with the Plantain, the Pepper and *Pandanus*; you will see the Fire-fly, and the Painted-Lady Butterfly occupying the same trees, and the Centipede, *Theliphonus*, Scorpion, *Opatrum*, and *Hister* under the same stones. The Palms gradually decrease in numerical importance and diversity of species, as you recede from the equatorial line. The Cocoa-nut does not grow much beyond the twentieth degree of latitude; but the *Pandanus*, or Screw-Pine, is apparently the most hardy of them all, and is the last to disappear. At the Island of Pa-tchung-san I found the *Musa paradisaica*, but very poor and small, and rarely producing fruit; the Palmetto, or Fan-Palm, (*Borassus flabelliformis*) however, seemed to thrive very well in the same island, and is used by the natives for a variety of purposes, particularly in the manufacture of hats. Among these islands I found the long Pepper (*Piper longum*) creeping among the loose stones of tombs, in wild uncultivated places, and the red globular berries of the half-ripe fruit, formed a pleasing contrast to the green foliage of the trailing Vines.

The Bamboo (*Arundo Bambos*) grows wild in large dense brakes, and in many parts the plains and mountain-flanks are covered with Pine forests, the trunks, in several cases, being chipped away by the natives for the sake of the resinous wood, which is here employed as candles, and which produces a bright, strong, clear light. They use, likewise, a kind of light, dry wood, as slow-matches, binding bundles of it together with grass, never allowing it once to be extinguished during many days. In numerous localities, more particularly on the summits of the hills, there is a kind of Cryptogamic plant, with a soft green, and somewhat gelatinous *thallus*, crumpled and irregular in appearance, which is eaten by the poorer sorts of the people. A kind of wild Celery, apparently the same as our *Apium graveolens*, is likewise employed by them as an agreeable anthelmintic and stomachic. Yams do not appear to be known, but Sweet-Potatoes, Peas, Turnips, Carrots, and Radishes, are met with in large quantities. The Cotton plant (*Gossypium herbaceum*) is cultivated in fields in many parts of the Meïa-co-shimah Group.

You will see darting among the grass, in the Islands of the Meïa-co-shimahs, a very elegant and beautiful little Lizard, with the throat and sides tinged with a delicate red, and five bright yellow lines running along the back, the central line dividing at the junction of the head and neck, and again uniting at the apex of the muzzle. The dorsal surface is black, and the sides are reddish-brown, with minute dark spots; the belly is of a light dull yellow, the legs are dark brown above, and light coloured on their under surface, and the tail, long and tapering, is of a lively and brilliant ultramarine blue. This pretty little *Saurian* is very active in its movements, frequenting the long grass and undergrowth, feeding on Flies, Locusts, and Caterpillars, and, in its turn, very frequently falling a prey to the small species of Viper peculiar to these islands.

The Green Turtle (*Chelonia mydas*), notwithstanding the inclemency of the season, was seen swimming in the tranquil bays, and a handsome yellow *Hydrophis*, banded with black, was also met with, frequenting the rocky coasts, hiding in holes of Corallines, and basking on the exposed rocks. It swims with great elegance, and dives with facility.

A species of *Trigonocephalus*, with the poison-fangs enormously developed, attains here to a very large size. A small *Coluber* is very common; and a handsome spotted *Tropidonotus* was procured, very similar to the *T. natrix*, or Ringed Snake, of Europe.

A brilliant green Tree-Frog (*Hyla*), with a bright orange abdomen, is found on the margins of the rivers, and among the four species of Lizards I noticed, including the blue-tailed *Zootica* and the *Tachysaurus Japonicus*, was a large brown species, remarkable for its black eyes, the golden iris being very narrow, and entirely concealed by the eyelids. The Toad, the Tree-Frog, the Viper, the Lizard, and the Snake, assume nearly the same form, size, and colour, that we observe in Europe; but here also occur forms, like the *Chelonia* and *Trigonocephalus*, which remind you that these regions are connected in their natural productions, with the Islands of the Archipelago of Malayan Asia.

Among Fish, a species of *Diodon* is common in the bays of Pa-tchung-san and the adjacent islands. The eye of this singular Fish is large, with a black pupil and splendid golden iris; when first caught it bites severely with its trenchant teeth, and spits at those who approach it. The *Diodon* swims heavily, and at the bottom, feeding on small *Crustacea*, Shell-Fish, and *Annelida*; when irritated, it distends its mis-shapen ugly body, and when puffed up in this manner, can, with difficulty, make progress through the water. I have seen seamen practise a rather cruel experiment on the poor *Diodon*, which they term "sprit-sail-yarding." This consists in passing a thin piece of wood across the skin of the back, which prevents the Fish from sinking, and at the same time enables it to make use of its fins; in this condition the unfortunate animal progresses through the water, to the great edification of Jack, who laughs, and calls it his "little steamer!"

Octopi, of enormous size, are occasionally met with among the Islands of the Meïa-co-shimah Group. I measured one, which two men were bearing on their shoulders across a pole, and found each brachium rather more than two feet long, giving the creature the power of exploring a space of about twelve feet, without moving, taking the mouth for a central point, and the ends of the arms for the periphery. Dorsal plates of *Sepiæ*, moreover, are found strewing the beaches, a foot and a half in length. These are not quite so monstrous, however, as those of a certain species which Trebius Niger, quoted by Pliny, mentions, the head of which was of the size of a cask, the brachia each thirty feet long, and the death of which was so difficult to achieve.* Pliny, himself, however, allows that in the Mediterranean *Loligines* may be found five cubits in length, and *Sepiæ* two! Sir Edward Belcher informs me that the fishermen of Newfoundland have a legend among themselves, that the backbone of a Cuttle-Fish was once found lying on the northern shores, as large as a whale! Surely the living owner of that dorsal plate must have been the famous "Kraken" that we remember to have read about! On moonlight nights among these islands, I have frequently observed the *Sepiæ* and *Octopi* in full predatory activity, and have had considerable trouble and difficulty in securing them, so great is their restless vivacity at this time, and so vigorous their endeavours to escape. They dart from side to side of the pools, or fix themselves so tenaciously to the surface of the stones, by means of their sucker-like *acetabula*, that it requires great force and strength to detach them. Even when removed, and thrown upon the sand, they progress rapidly, in a sidelong shuffling manner, throwing about their long arms, ejecting their ink-like fluid in sudden violent jets, and staring about with their big, shining eyes (which at night appear luminous, like a cat's,) in a very grotesque and hideous manner. The natives of most of the islands in the China Seas dry these Mollusks; as likewise the soft parts of *Haliotis*, *Turbo*, *Hippopus*, *Tridacna*, &c., and make use of them as articles of food. But from my little experience of this kind of diet, notwithstanding the assertion of the learned Bacon, in his 'Experiment solitary touching Cuttle-ink,' that the "Cuttle is accounted a delicate meat, and is much in request,"* I should say that it is as indigestible and innutritious, as it is certainly tough and uninviting. Cephalopods, however, are eaten at the present day on some parts of the Mediterranean coast; and in Hampshire I have seen the poor people collect assiduously the *Sepiæ,* and employ them as food. Besides using a small kind of salted beans, the natives of the Meïa-co-shimahs flavour the balls of Rice and of Sweet-Potatoes, which constitute the principal articles in their system of dietetics, with a peculiar composition, very similar in taste to "Blachong," the universal sauce of the inhabitants of the Oriental Archipelago, a substance made out of decomposed Shrimps and small Fish, fermented, and dried in the sun. Notwithstanding the proverbial partiality of the Japanese for *Soy,* I never saw that condiment employed at any of the entertainments of the Meïa-co-shimites.

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* Vide Pliny, Cap. xxx. Lib. 9.

The common Snail of the Meïa-co-shimahs is eaten by the natives, as the *Helix aspersa* and *pomatia* are occasionally in Europe. The Malays are fond of the *Cerithium telescopium* and *palustre,* found in the Mangrove swamps. They throw them on their wood fires, and, when sufficiently cooked, break off the sharp end of the spire, and suck the tail of the animal through the opening. The *Haliotis* is taken trom the shell, dried in the sun, strung together on rattan, and is eaten raw by the same people.

The poorer people of the Philippines are fond of the *Arca inequivalvis,* boiling them as we do Cockles and

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* Works. Nat. Hist. p. 167. Bohn's Ed.

Muscles; the flesh, however, is red, and very bad-flavoured. Some *Monodonta*, which I have eaten among the Korean Islands, are quite peppery, and bite the tongue, producing the same unpleasant effects upon that organ, as the root of the *Arum maculatum*, or leaves of the Taro, but in a much less intense degree; and a species of *Mytilus*, found in the same locality, has very similar unpalatable qualities.

The *Paludina*, common in the Padi fields, in these islands, escapes detection, by covering itself over with small hard masses of mud, in which state it resembles those turbinated habitacula of the larvæ of some fresh-water insect, to which Swainson has applied the name *Thelidomus*, conceiving them to be true shells, representing, I believe, in his quinary system, the genus *Phorus*. This peculiarity of the *Paludinas* did not appear to me to be accidental, as I have seen shells of the same genus in England, Java, and elsewhere, which entirely wanted the very peculiar appearance above alluded to, and the *Lymnæas*, in the same ponds, were not muddier than is usual with those shells. All Mollusks have certain means of avoiding threatened dangers. The Gasteropods withdraw their bodies within their shells,

> As the snail, whose tender horns being hit,
> Shrinks backward in his shelly cave with pain,
> And there, all smother'd up, in shade doth sit,
> Long after fearing to creep forth again.—*Shakspeare.*

The *Pteropods* contract their bodies when alarmed, and sink suddenly to the bottom; the Bivalves close their shells, and bid defiance to the enemy; the *Pholas* and *Solen*, like many of the Cephalopods, including the

Cuttle-Fish and *Loligo,* eject, as is well known, a coloured fluid, and so escape in the midst of the clouded water they have produced. The *Ianthina* and *Aplysiæ* have the same powers, especially the large *Dolabella Rumphii;* and the *Actiniæ* squirt water in the face of the intruder, as they shrink back into their burrows.

When we consider how very numerous the enemies of Molluscous animals are, we must allow they have much need for such ingenious modes of defence. On the high seas they constitute the prey of Dolphins, Cachelots, and of a thousand voracious fishes, besides insatiate Albatrosses and industrious Petrels, which are ever on the alert to capture them. Along the shores they are snapped up by patient Turnstones, and enterprising Oyster-catchers; and in fresh-water ponds they become the lawful prey of Plovers, and all those other birds that love oozy watery haunts. Terrestrial Mollusca find enemies, even among insects, many *Silphidæ* attacking and destroying them in the same manner as the *Hydrophili* and other *Philhydrida* prey upon and devour the *Paludinas* and *Lymnæas,* among aquatic genera.

The list of genera of fresh-water shells in these islands is limited, as far as my experience goes, to *Paludina, Lymnæa,* and *Assiminæa;* no *Succineæ, Neritinæ, Planorbes, Ampullariæ* or *Melaniæ* were observed by us. The land-shells were *Helix, Pupa, Clausilia, Truncatella, Carocolla,* and *Cyclostoma.*

In the shallow pools left by the receding tide on the shore of Koo-kien-san, one of these islands, I discovered a large species of *Dorididæ,* which appears to be the type of a new genus, differing from all the other genera of the family, in having the vent and the gills, which are extruded from it, situated beneath the edge of the mantle, which latter is extended beyond the circumference of the foot, while in all the other genera, as far as I am aware of, the vent and gills are situated on the mantle itself. This genus may be called *Hypobranchæa*, and will be figured in the 'Zoology of the Samarang,' now in course of publication. The species (*H. fusca*, Adams,) resembles in appearance a large, flat, sandy-coloured Slug, and crawls along in a slow and languid manner over the sandy surface. Owing to its exact resemblance in colour and appearance to the floor on which it lives, it is well calculated to escape the notice of many of its enemies. My specimen was mutilated by a spade in the hands of a seaman, owing to this circumstance, and although a considerable portion of the foot and mantle was removed, such was the tenacity of the life of the animal that it crawled away apparently as if uninjured.

Two of the most remarkable Crustaceans to be met with in this Group, are the *Scopimera globosa* of De Haan, and the *Mycteris deflexifrons*, of the same naturalist. The *Scopimera globosa* forms burrows in the muddy banks and sandflats, just above low-water mark, perforating the surface in every direction. In some parts of Koo-kien-san, these Crabs are so numerous that they impart a peculiar colour to the shores when seen at a little distance. They walk but slowly, and are very inactive in their habits. When disturbed, they make awkward efforts to get out of sight, by quickly burying themselves in the sandy mud like some *Macrophthalmi*.

The *Mycteris deflexifrons*, although somewhat resembling

Ocypodes in many particulars, yet differ materially from them in vivacity of movement. Like their swift-footed consimilars, however, they form superficial burrows in the sandy mudflats, into which they retreat in a clumsy, scrambling manner, on the approach of danger. In many parts of the Meïa-co-shimahs I have ridden over many acres of sandy mud, covered with these bright blue Crabs, and on looking behind could perceive a dark straight line, made by the passage of the horse, as he caused them to burrow in the mud, in his progress onwards. They seem to enjoy themselves just after the water has left the flats dry, and appear then to be most on the alert in procuring food.

There is a species of *Gelasimus* allied to *G. Chlorophthalmus* (Edwards), with a bright orange foot-claw bigger than its body, which inhabits burrows, formed among the grass, in muddy places near the sea, and among the poorer classes the *Ocypode ceratophthalma* is collected as food. They dig them out of their deep sandy burrows with great eagerness and diligence, by means simply of their hands. I have seen them sometimes drive them out by insinuating a long pliant twig into the winding labyrinth of the crab, and so forcing its inmate to make its appearance. I have known them also, where the ground was hard, pour water into the holes, and so inundate the poor *Ocypode*. These people, by examining certain marks, can tell whether the swift-footed inhabitant is at home or abroad, and conduct their operations accordingly.

On the flat sandy beaches of this group of islands, if you take the trouble to turn over the stones which the tide has left dry, you will perceive hundreds of *Porcellanæ*, flattened Crabs, shuffling along the surface of the upturned stones in a very ludicrous manner. They are very active and bustling in their habits. This observation, however, applies more particularly to *P. pulchripes* (Adams and White) and the species allied to it; for another species, *P. versimana*, (Adams and White) is found among the coral reefs of Koo-kien-san, and is apathetic and indolent, and *P. obesula* (Adams and White) was dredged from twenty-four fathoms in the Sooloo Sea, and was very sluggish in its movements. A very rare and delicate little Crab was ascertained by me to belong to the fauna of this group, namely, the *Elamena unguiformis* of De Haan. It is spider-like in its appearance, slow in its movements, and lurks concealed in holes of the under-surface of stones immediately below high-water mark. I discovered, also, a species of *Calappa*, allied to *C. spinocissima*, under stones, in the shallow sandy bays, which covers itself with sand, and when captured feigns death, remaining perfectly motionless with all its members snugly tucked under the carapace, and the chelæ folded on the front of the shell. It is a timid and slow-moving creature.

A new species of *Alphæus*, a curious looking shrimp-like animal, which inhabits pools under stones on sandy beaches, and when disturbed makes a sharp loud clicking noise, by snapping the foot-claws, likewise rewarded our research. In the Padi fields, a species of *Gecarcinus*, allied to *G. lateralis*, is very common, running about in all directions, feeding on the larvæ of Dragon-flies and other insects, and becoming, in its turn, the prey of the large Herons that are always to be seen fishing for Frogs in those localities. To these may be added new species of *Hippa*, *Remipes*, *Trapezia*, *Macrophthalmus*, *Pilumnus* and others, which will be described in another place.

In many parts, these islands are over-run with various kinds of *Sesarma*, the species of which differ very much in their habits. Among those I detected as belonging to the Fauna of the Meïa-co-shimah Group, one was found under stones, on sandy flats just below high-water mark; another inhabited the coral reefs; a third, fresh-water rivulets and pools, hiding under stones and logs, and climbing the roots of trees with great facility. Another, allied to *S. affinis*, De Haan, has the same habits; another species, with the same love of climbing and hiding under stones, runs more upon the dry land, among the roots of grass, &c., and is very agile. One, of a marbled, light sandy colour, with pale grey blotches, lives in the holes of the sand, in brackish pools; another, with a hairy carapace, dark brown and purple, inhabits holes in the sandy beach above high-water mark; while in another part of the world, I found a species living in fresh-water rivulets among weeds; and in the forest of Celebes another under damp stones and logs, at some considerable distance from fresh-water ponds.

Most of the *Dorippe* inhabit deep water, from twenty to thirty fathoms, living on a muddy bottom. They are very numerous in the China Sea. The Chinese fishermen often bring them up in their nets, and among large numbers which I have observed in their boats, I have found nearly every individual with an adventitious body (I believe an alcyonoid sponge) attached to the carapace, and retained in its position by the hooks of the two small posterior dorsal pairs of legs. This body is divisible into a thin brown layer, with concentric fibres, and an external, white lamina, with radiating fibres, and a dark central nucleus. I have frequently noticed precisely the same peculiarity in *Dromia verrucosipes,* in the Meïa-co-shimah Group, and I believe naturalists have perceived the same habit among other genera. Many of the specimens both of *Dorippe* and of *Dromia* which I examined in this condition, had perfectly soft carapaces, and this body may serve them as a protection during the season of their moulting The *Caphyra pectenicola* (White) bears a small pecten shell, in a similar manner. This curious little Crustacean, which was dredged by us in the Sunda Straits from thirteen fathoms, takes up its abode in the deepest valve of the deserted *Pecten,* locking itself on by the claws of its posterior legs to the ears of the shell, its tender back being secured from harm by this adventitious covering. Sir E. Belcher informs me that he discovered another species in the Gulf of Papagaya, inhabiting the single valve of a *Terebratula,* which was in a partially softened condition.

Many other genera, as *Hyas, Maia, Arctopsis, Mithrax* and *Pericera,* are well known to have similar propensities, loading their backs with foreign bodies, Sponges, Algæ, and other Phytozooic and vegetable productions.

On the summits of the hills near the sea-coast of many of these islands, and particularly on those of Koo-kien-san, I procured numerous *Talitri* and *Gammari* from among the roots of the long damp grass; rather a remarkable circumstance, as these Crustaceans are usually found close to the margin of the sea, concealing themselves under stones and sea-weed. They were jumping about in all directions, and appeared to wage a continual war, not only with hundreds of *Tropidinoti* and other *Orthopterous* insects, but with a bark brown *Carabideous* insect, which was found running with great rapidity among them, evidently bent on destruction.

The *Charybdis miles* of De Haan was swimming and shuffling about in the shallow water of the flat, sandy beach, proving a very troublesome companion to those seamen who were bare-footed, on account of the very long, large, sharp spiny powerful claws, with which they are furnished; for although they fold the chelæ on the forepart of the carapace, and contract their legs when caught, they would dart among the legs of the boat's crew, and inflict rather severe scratches. As, however, they were large, and fit for the pot, this was considered a mere trifle by honest, hungry Jack.

On one occasion, I was very much surprised and delighted, as we were sitting in a circle with the natives around a large wood fire, to see some young boys bring in several large Crabs, having their chelæ, or foot-claws, covered in a very remarkable manner, with a quantity of coarse silky hair, so very dense and thick that they more resembled rabbits' feet than the claws of a Crustaceous animal. These curious Crabs, which were the *Eriocheir Japonicus* of De Haan, were immediately, even before I could rescue a specimen, thrown upon the embers alive, and when burnt crisp and brown, broken by the teeth of the assembled islanders, and consumed, with a few exceptions, shell and all. They appeared very much to relish this primitive, and somewhat savage kind of feast.

Among the new and interesting *Crustacea* met with by us on the coasts, were numerous species of *Leucosiæ.* These handsomely-marked creatures generally affect a sandy bottom, and live at considerable depths among Corallines and Madrepores. They are seldom found in muddy or turbid water, but love the deep sandy banks, where they move in a sluggish manner, and seem destitute of acute perceptions. Sufficiently protected by their porcelain shields, they want the quick progression and threatening attitudes assumed by many Crustaceans. One of the most beautiful of the species is the *Leucosia hæmatosticta* (Adams and White), which is of a dead white colour, covered with numerous round crimson spots.

Among the *Orthoptera* noticed by us among the islands was an apparently new genus, between *Tropidinotus* and *Teratodes,* beautifully marbled with crimson, brown, and yellow; a *Phylloptera,* of a dirty, dull, green colour, having four dark spots on each elytron; a *Mantis,* of a light brown colour; and a large species of *Phasma*; thus again illustrating the curious intermixture of temperate and tropical forms, even among the world of insects. One of the most common *Hemiptera* was a genus of *Coricidæ,* of a delicate emerald green, with two bright golden spots on the body. A genus of *Orthoptera,* allied to *Truxalis,* but with the antennæ, nearly cylindrical, and the head not so much produced, was a common inhabitant of the grassy summits of the hills.

There is a large and handsome Glow-worm (*Lampyris*) which hides, during the daytime, under dead leaves and stones; but which is beautifully luminous during the night. The penultimate segment, slightly gibbous, constitutes a bilobate lamp of great brilliancy, emitting a much yellower light than the generality of this tribe. It has a voluntary power of suppressing or evolving the shining property of its lantern, and when handled, feigns death, at the same time hiding its light, until the danger is passed. There are yellow non-luminous spots on all the other segments, and the upper part of the body is dark brown, approaching to black. The legs are brown, with the exception of the distal ends of the femur and the tarsus, which are of a lighter colour. The head is furnished with a retractile proboscis, having a yellow sheath.

The Centipede of this group lays her eggs under flat stones, to the number of about twelve or fourteen. They are of a semi-transparent straw colour, and the female coils herself around them like a snake. In the egg, the young one is pale, transparent, light-yellow, perfectly globular, with a slit or mark like the hilum of a seed; this slit afterwards forms a deep furrow, and then a wide fissure, one side of which is somewhat more produced and becomes the head, and the other, folded inwards, is the tail and remainder of the body. A large dark spot then appears on each side of the head, which are the eyes, and three short legs protrude from the skin towards the anterior part of the body. Immediately after their extrusion from the egg, the helpless young are nearly pellucid and yellowish, with great black eyes, rounded bodies, big heads, and rudimental legs; the segments are but faintly marked, and the little animal is bent upon itself like a larva of a Cockchafer; the antennæ show themselves by degrees, the other members make their appearance, and, as well as the body, become distinctly articulated; the integument becomes hard and opaque, and the, as yet, harmless little insect crawls about, languidly at first, but afterwards more briskly. The mother appears as attentive to her offspring as an Earwig; and as jealous of their safety, as a hen over that of her chickens.

There is a small *Scolopendra*, with equal-sized segments, of a dull violet colour, found under stones in these islands, and another small species perfectly black.

The small Scorpion found in rotten wood, under bark, and under stones, is of a delicate form, and is, I believe, a species of *Androctonus*. There is another darker and larger kind, found also, but more rarely, under stones, that appears almost identical with the *Scorpio Europæus*. Although held in great abhorrence by the natives, neither of these Scorpions possesses much venom, as I had the misfortune to be stung by one species, and one of the boat's crew by the other.

The Spiders of the Meïa-co-shimah Islands exhibit some very remarkable forms. There is a curious *Epeira*, with the dorsal surface of the abdomen furnished with a radiated crown of hard pointed processes, and the epidermis richly painted with brown and gold. It spins a large and regular web in every brake and bush.

Another large and singular Spider, with long, slender legs, and an elongated body, black, and marked with yellow lunules and patches, crawls among the foliage of the trees in the low woods that occur in some parts of Pa-tchung-san. Another species of the same genus is altogether black. I noticed this kind also in the Bashee Islands.

The *Theliphonus caudatus*, a curious osculating link between the Scorpions and *Tarantulas*, is not uncommon in the islands. It remains concealed generally under logs of wood and stones, and seems to love dark, damp forests as the seat of its depredations, living in the society of the larvæ of Glow-worms, the Scorpions, the *Scolopendræ*, and a dingy coloured species of *Blatta*. It is slow in its movements, and when alarmed raises its stingless tail in a threatening manner, but never attempts to use its cheliceræ, as organs of aggression or of defence.

I am aware that persons have been accused of allowing their imagination to trifle too freely with the reins, in describing submarine scenery; but I shall simply state the matter as I found it, and in language that came freely on the spot, and educed from first impressions. Dendritic Zoophytes, with their slender branches loaded with innumerable richly coloured *polypi*, like trees covered with delicate blossoms, uprose from the clear clean bottom of the bay, distinct and characteristic in their specific forms, and contrasting strangely and powerfully with those most apathetic and stone-like combinations of the plant, the animal and the rock, the Madrepores, the Millepores, and the Nullipores. Flat, and immovably extended on the sand, in the bare spots between the Corallines, were impassive large blue five-fingered *Asterias*; and crawling with an awkward shuffling movement, like an *Octopus*, were numbers of the slender *Ophiuri*, with their snaky arms, groping their way among the weeds, and striving to insinuate their writhing forms beneath the coral masses. Fixed flower-like *Actiniæ* were expanding their fleshy petals on the rocks; the slender *Nereis*; the long-armed *Comatula,* and the languid, slow-moving *Holothuria,* together with numerous fish and Crustaceans, contributed to prove that nature is ever weaving the subtle woof of existence beneath the surface of the waves.

CHAPTER IV.

THE PHILIPPINE ARCHIPELAGO.

Anecdote of a Python—Exploration of Sesarma—Curious Cavern—A ramble about Samboanga—Villages—Scenery—Vegetation—Aborigines of Mindanao—The Flying-Fox—Remarkable Crabs—Habits of Spiders—Insects—Mindoro—Hostility of the Natives—Use of the bow and arrow—Ylin—Poisonous Plant—Insects—Habits of Molluscous Animals.

On the 4th of February, 1844, we left Koo-kien-san, one of the Meïa-co-shimah Group, and arrived at Manila on the 16th of March, where we remained until the 1st of April. While lying in the truly delightful bay at this place, a trifling incident occurred, showing the extreme vivacity, and rapidity of movement, in the larger Serpents, even in those of the Boa tribe, especially when first captured. They are, indeed, then very different from those apathetic listless monsters one sees coiled up in blankets, at Zoological Gardens, and in Menageries. Sir Edward Belcher had a very beautiful specimen of the *Python Schneideri* presented to him, about twelve feet long, and having one day given it a chicken, the reptile, as usual, compressed it nearly to death, within the muscular folds of its body, when one of the bystanders, more tender-hearted than the rest, begged the life of the fowl. I had no sooner, however, introduced my arm with that benevolent intention, than throwing back its head, and unwinding its body from its prey, "the spirited, sly snake," as Milton would have termed it, darted at my hand with the greatest velocity, and held me fast with its teeth, by the ball of the thumb, nor was it without some trouble, that I was able to extricate myself, owing to the fact that the long, sharp, curved teeth of a serpent, all point backwards. Some time after this event, the death-warrant of the poor reptile was sealed, and I appointed myself his executioner. The question was how to persuade a snake so large and active, to enter a stone jar, filled with spirits of wine, without making a vigorous resistance. However, quickly seizing it by the neck, I drew the reptile from its cage, and had his body held down by a party of volunteers. The muscular contractions, however, proved somewhat too powerful for their weight and strength, and the caudal end escaping wound itself about my leg, which, perhaps, would have got a squeeze, but for an accession to our force, in the person of my friend Mr. Charles Richards. "*Vi et armis*," the doomed serpent was now consigned, without mercy, to a death somewhat similar to that selected by a certain duke of Clarence.

If the enormous Boa-Constrictors described by Pliny as warring against the Elephants of India, with perpetual discord, "tantæ magnitudinis, ut circumplexu facile ambiant nexuque nodi praestringant," were as lively in their movements as our *Python* of Leuconia, they must indeed have been "dragons" in every sense of the expression!

Schlegel, in his 'Physiognomy of Serpents,' observes, in a note p. 98, "Professor Reinwardt has witnessed, at Java, a spectacle which proves that it is not always right to trust to these animals (Boas). A Javanese had carried to the house of M. Van der Capelle, a large *Python*, and wishing to make it come out of the basket in which it was, the serpent, by a single stroke, gave him a very considerable wound, laying open his fore-arm through all its length."

On the 1st of April we left Manila, and on the 5th examined the reefs about Panagatan, and while here examined the small island of Sesarma.

We passed a very agreeable day, wandering about collecting plants, catching insects, and hunting lizards, until we were fairly tired out, and then reclining at our ease, took a siesta in a cool cave, which we accidentally discovered in the rocks along the sea-shore. This cavern had a very narrow entrance, but when once you had found your way into the interior, there was a high, arched roof, with numerous stalactites hanging pendent from it, and, arising from the bottom, stalagmites of various shapes and sizes; myriads of dark flitting bats fluttered in the uncertain light, vibrating their leathery wings with a low, murmuring sound, while others clung in huge, dark clusters to the chasms in the roof; the calcareous floor of the cavern was whitened with the accumulated excrement of these twilight-loving animals. As nothing is to be done in these expeditions without lighting a fire, I assembled the jolly-boat boys, left under my command, and, with incredible labour, brought together a vast heap of drift wood, dried leaves and grass, which soon became a blaze, and illuminated gloriously the interior of our cavern; but, alas! short-sighted mortals that we were, forgetting the necessity of a chimney, and the aperture being small, we were completely smoked out, to our no small discomfort.

On the 6th of April we touched at the Cagayanes, and on the 8th we anchored off Zamboangan, or Samboanga, a penal settlement of the Spaniards on the Island of Mindanao, or Majindanao, as it is sometimes written, and notwithstanding the somewhat equivocal character of many of its inhabitants, one of the most pleasing places we visited among the Philippines, a few observations on which may not be displeasing to my readers. Owing to the kindness of Sir Edward, and the liberality of the Governor, I was enabled to enjoy a very pleasant little excursion, of several days, in the neighbouring country. Mounted on an excellent horse (which, however, on starting, managed to rear so high as to fall backwards upon me, without doing me much injury, as I had time to slip away before his hoofs could reach me,) and accompanied by a very intelligent guide, one Mariano Alvirez, I proceeded, at an easy pace, through the villages of Varris el San Juadedios, Tesseros, Canelar, Cantador, Prenza, Santa Maria, Tumogan, Paraguiaba, Voal, Lama-Lama, Tirando-àlerte, and, lastly, Tugbugan, admiring in my progress the wild luxuriance of vegetable life in these latitudes, here spread out in all its prodigality, in the form of splendid trees and

> "flowers as wild and fair
> As ever dressed a bank or scented summer air."

Here and there the naked, muddy skins of large-bodied

Buffaloes were seen wallowing in weedy ponds, or browsing placidly among the bamboo mazes, or, with enduring patience, engaged in drawing burdens; here and there, at various turnings, quaintly carved and antique wooden crosses would remind you of being in a Catholic, though savage country, while the open hospitality of the villagers, and the vows of brotherhood and eternal friendship proffered you in every direction, brought to mind the prodigal liberality of their noble-minded Spanish subjugators.

It would be endless to enumerate all of the botanical beauties of Samboanga, but the handsome scarlet flowers of the *Poinciana*, the feathery foliage of the Tamarind, the grateful Guava, and the Palms, those "magnificent offspring of Tellus and Phæbus;" the agreeable subacid fruit of the *Tambeio*, the large dense foliage of the Breadfruit, and the aromatic Lime and Orange, were all worthy of the passing notice of the student of nature.

To these may be added the Bugo, or *Piper Betel*, climbing gracefully in the gardens; with its less illustrious compeer the Sanquilo (*P. obliquum*), the *Dyospyros embriopteris*, or Luya, the Mango (*Mangifera Indica*), the Lumboi (*Calyptranthes*), the Bixa, or Achote; another species of *Dyospyros*, called by the natives "Mabolo;" the Balibago, a kind of *Hibiscus*, the Balod, or *Nauclea*, the Tubadalag, or *Callicarpa*, and the luxuriant groves of the Caurayan, or *Bambusa*; the graceful hanging foliage, and brilliant berries of the *Abrus precatoria*, the lofty trunk, and stupendous pods of the *Cassia grandis*, the long and pendent fruit of the singular *Stravadium album*, the bell-shaped flowers of the succulent viviparous-leaved *Bryophyllum calycinum*, the elegant climbing *Clitoria ter-*

nata, with its large blue butterfly-flowers; the white and purple blossoms of the *Cleome viscosa*, the golden *Coreopsis*, adhering like a parasite to the trees, and twining epiphytic *Loranthi*; the compound leaves and yellow spikes of the medicinal *Cassia alata*, and along the sea-beach the trefoil leaves and the blue flowers of the *Vitex trifolia*, the clustering trunks of the Banyan tree, and the golden downy fronds of a gigantic fern. I did not fail to recognize the Gogo (*Entada pursætha*), an infusion of the spongy fibres of the trunk of which, is used by the natives for various affections of the skin, and which I have also seen employed with some advantage. The pods of the *Theobroma cacao* were ripening on the trees. A most delicious chocolate is manufactured at Samboanga from the seeds; many parts of the plant are also used medicinally. The glutinous sap of the *Bombax pentandrum* is here applied to parts affected by Rheumatism, and the cottony seeds are used as soporific pillows, like those famous poppy ones of Somnus. The down, moreover, forms an excellent moxa.

The fresh fruit of the Butong (*Barringtonia speciosa*) is bruised and thrown into the water to benumb fish at Samboanga, and fishing-nets are made of the dried fibres. The flowers are large, and very beautiful, the long stamina forming an elegant scarlet tassel. The other species (*B. racemosa*) flowers in May. The seeds of the Camonsilis (*Fuga lanceolata*) are used in alleviating the painful punctures of the venomous spines of the Ray and other fish.

Among other trees, a variety of the Banga, or *Areca Catechu* (*humilis*), was pointed out, distinguished by its flattened fruit, and diminutive size. The *Rosmarinus*, "Romero," or Rosemary, is carefully cultivated in pots, and much esteemed by the natives as a stomatic.

Near the village of Tugbugan I had an opportunity of seeing two of the aborigines of Mindanao "los Indios," as the Spaniards call them, to distinguish them from "los Negros" or Papuans, and "los Moros," or Malays. They are also named *Manabos* by some, although so numerous are the tribes, that it is difficult to determine them with any precision, for they appear to be almost as numerous as those of Borneo. Those I saw were stated by the villagers to live in the mountains, to acknowledge no authority, to go nearly naked, and to live chiefly on the Sago and Indian Corn. Their arms, which I likewise inspected, consisted of large painted shields, the sumpitan, spear, and parang or chopping-knife, which all bore a striking resemblance to those used by the Dyaks. The men were of fine proportions, and somewhat noble bearing, of a light black colour; the nose straight and well developed, the facial angle and lips like those of the negro, and the hair crisp, and disposed in distinct masses over the head. Their eyes were large and black, and their faces smooth and shining, without any vestige of a beard. The people of Samboanga and the neighbouring villages affect to hold these natives in the utmost terror and disdain. Like the Arafuras of New Guinea and the Aru Islands, the Dyaks of Borneo, the Monaboes inhabiting the interior of Malaya, and the Rajangs and Battas occupying the mountaing of Sumatra, these aborigines of Mindanao, according to the information of my guide, and certain village gossips, who seemed well acquainted with them, live in separate communities, each governed by an independent chief. Their dress resembles that of most savage tribes, being simply a strip of cloth encircling the waist, with one end brought down in front, passed between the legs, and fastened behind. Their hair being crisp, wavy, and growing in separate tufts, or bunches, in the same manner as that of the Papuan or Pelagian negroes, would seem to indicate that in Mindanao, as in Borneo, negro-like races inhabit the interior. I do not think the people I saw belonged to any of those savage tribes alluded to by Prichard, "who are supposed to belong to the race of Harafaras, and are said to have some analogy in dialect and physiognomy with the Idaan or Dyaks of Borneo." *

Although it may have been satisfactorily proved by the researches of Prichard and others, that the races of Oceanica are distinct, and cannot be derived either from the Peruvians on the eastern boundary, or from the tribes of South Africa, which bound them on the west; yet it is curious to trace analogies between people apparently so very distinct as the Malayo-Polynesians, and the various tribes disseminated over the continents of the two Americas. I never visited a horde of Dyaks without involuntarily thinking of North American Indians, probably, from some similarity of feeling that exists between them, as to the necessity of either scalping their enemies or of chopping off their heads. In many points their religious belief is also the same. "That enigmatical subdivision of the natives into an almost countless mul-

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* Phys. Hist. of Mankind, vol. v. p. 59.

titude of greater and smaller groups, and that almost entire exclusion and excommunication with regard to each other, in which mankind presents its different families to us in America, like fragments of a vast ruin," alluded to by Dr. Von Martins, likewise reminds one of the scattered wandering tribes of beings, that rove from place to place in the interior of Borneo. It has been said that the astronomy of Mexico is of Asiatic origin, and philologists inform us that the Malay and Peruvian dialects have many words that may be referred to common roots; and it is singular that in many of their habits and customs may be traced a sort of similarity. For instance, the use of the sumpitan and poisoned arrows is in vogue among the wild people of Guiana, as it is among our friends the Dyaks; the habit of filing the teeth sharp, and of using a constant masticatory, as lime with a narcotic leaf, is peculiar both to Peruvians and to Malayo-Polynesians. As with languages, so it is with the aborigines of any climate, the more primitive their condition, the more nearly they approximate a simple common type; and we may thus account for the casual resemblance observed between the savages of America and those of the Indian Archipelago. Amongst the Malays and Bugis, civilization has imprinted certain moral and physical peculiarities, which enables them, although of the same family of mankind, to stand out in bold relief from their more ignorant, primitive, and less-fortunate brothers.

The "Filipinos," or the peaceable people of Bisayan origin, that constitute the principal portion of the population of the Philippine Islands, believe that the aboriginal races of the interior came originally from Borneo, and it is a curious fact that the legends and traditions of Java assert, that the inhabitants of that island came from Borneo; and indeed some writers believe, that all the different races belonging to the Asiatic Islands were derived from this common focus, although it is far more likely, in my opinion, that, as Dr. Prichard conceives, all the various races of these islands may originally have been derived from the peninsula of Malacca, which constitutes the south-eastern extremity of Asia; for that is the only continent which contains men at all resembling in physical characters the Oceanic tribes.

The *Pteropi,* or Flying Foxes, take their departure at the fall of day, from their places of concealment, among the low islands, in thousands, all steadily wending their way towards the huge forests of the interior, where their favourite fruits are found, and at the early blush of dawn they are seen returning, in like manner, to their diurnal haunts, where they hide in hollow trees, or caverns among the rocks, or hang suspended by the thumbs from the under-surface of the trees among the dense foliage. When the *Pteropus* flies, he generally chooses an exalted station in the air, and his motions are deliberate, noiseless, and crow-like.

At the watering-place not far from the small village of Calderas, among other interesting specimens, I captured the rare *Utica gracilipes,* (White) which has the very remarkable habit of strongly contracting all its members when caught, with what may be termed a cataleptic rigidity; and this trick, together with its singular tabular brown carapace, enables it to escape detection among the dead leaves and rotten pieces of wood, which almost invariably fill the ponds and rivulets in the tropics. This mode of feigning death to escape its enemies, is the more curious in this Crab, as it appears to be allied to the *Grapsidæ*, which are very energetic in their endeavours to escape. The under-surface is dark brown, of a lighter tinge on the legs and post-abdomen, which latter has a light yellowish line down the middle.

Near the same spot, and not far from Calderas, a species of *Sesarma*, of a brown colour, with the tips of the chelæ orange, and the cornea of the eye perfectly concave, is very common. It lives in the fresh-water rivulets, among weeds, like the *Utica*; while another species is found under damp logs, and stones, at a considerable distance from any water.

Never have I been better amused than when observing, in the forests of Mindanao, the habits of the extraordinary spiders that abound there, to figure and describe the varied forms of which, would require the pencil of Abbot, and many years of unwearied application.

The bodies of the *Epeiræ*, seen in the tropics, are often most splendidly ornamented, I might almost say illuminated, for many of them remind you of the gaudy ancient missals, painted by monks in the dark ages. You may have white figures on a red ground; red, yellow, and black, in alternate streaks; orange marbled with brown; light green, with white ocelli; yellow, with light brown festoons ; or ash-coloured, and chesnut bodies, with crescents, horse-shoes, Chinese characters, and grotesque hieroglyphics of every description. Then, again, the shape of their bodies is endless in variety; they are round or oval, flattened or globular, angular, tuberculated, lobed, spined, or furnished with hairy tufts. These examples,

> "Whose shapes would make them, had they bulk and size,
> More hideous foes than fancy can devise,"

taken at random during one or two excursions in the woods, will tend to show what a wide field is open to the naturalist in these regions of the sun, provided he has nothing of more importance to engage his attention than the investigation of Apterous insects.

In the forests about Calderas, I collected some splendid species of gold and silver-marked *Tetragnatha*. One, which might be named *T. nitens*, has a dark, shining-brown thorax, and a glittering silvery body, with five black spots; the legs banded with dark brown, and the under side light black. It constructs a large, ingenious, symmetrical web, and drops, when touched, to the ground; taking care, however, at the same time, to suspend itself by a web, by means of which it ascends again, when the enemy has departed. In the centre of its web, it spins concentric circles, and thick, irregular mazes, of a fine yellow colour, and often of very complicated devices. When it falls to the ground, it folds up its legs, and feigns death, all its members being perfectly rigid. The *Tetragnatha* have a remarkable habit of dividing their eight legs, as they cling, head downwards, to the centre of their toils, throwing out four directly forwards, and four directly backwards. Some species, however, have the third pair of legs extended straight out, in a lateral direction. Another common species had a body mottled with dark brown, and covered with white markings; legs brown, banded; the thorax burnished bright green, with darker markings. I have named it, provisionally, *T. refulgens*. Numbers of the genus *Theridion,* of a black colour, were running actively about among the dry, dead leaves that strewed the ground; and some handsomely-coloured species were discovered crouching among the foliage of the trees. One was marked like the *T. Sisyphus* of Haan (Tab. 58. fig. 132.); and another large-sized species was of a bright emerald green. The *Attus formicoides* (Walckenaer), or an allied species, was basking on the dead leaves in the sunny spots; and numerous pretty species of *Salticus,* allied to *S. crux* (Haan, Tab. 17. fig. 52.), but of much larger dimensions, were common spiders. A species of *Attus,* allied to *formicoides,* which may be called *splendens,* was taken here. It was of a brilliant metallic green-gold, with the under-surface fine metallic purple; the legs banded with light brown, and burnished green. It was springing about the foliage of the low trees. Another *Attus* was of a shining black, with several bright ultramarine spots on the abdomen, and light brown legs, banded with darker brown. Numbers of black-coloured *Theridia* were running about over the dead leaves, simulating, at a little distance, so many odd-shaped Ants; numerous other species of this genus, which were seen living among the flowers and foliage of the trees, had their abdomens variegated with beautiful colours. One species, with a hairy body and legs, and shining chesnut-coloured chelicera, runs quickly when pursued, and uses these organs in self-defence. Its body is of a dark olive brown, and it appears to love dark nooks and holes of the bark of trees, and frequently hangs suspended from the under-surface of the leaves. I observed another species, which knew it was being watched, place itself upon a diseased leaf, where it remained quite stationary until after I had taken my departure; and had I not seen the sidelong movement of the cunning little creature, in the first instance, I should not have been able to distinguish its body from the eroded surface of the leaf. Those that live among the foliage and flowers, are vividly coloured, and many flies and other insects are, no doubt, attracted towards these Spiders, by reason of their gaudily-tinted bodies. I have seen the abdomen of one marked with lilac, yellow, and crimson, three powerfully contrasted colours. Others are green, and actually reticulated, like the veined surface of a leaf, with the mid-rib running down the centre, and the secondary nervures proceeding outwards from each side; the bodies of others resemble the splendid variegated blossoms of the sorts of *Calceolarias*, grown in our gardens.

Several timid, soft, retiring, long-legged *Pholci*, with fawn-coloured bodies, and semi-transparent red-brown legs, covered with long hairs, formed large, loose webs among the rotten wood and leaves that strewed the ground. The legs of these arachnidans appear too weak to support their bodies in running; therefore they resemble their aquatic marine analogues, the *Pycnogonidæ*, which remain stationary among the tangled and thread-like Keratophytes, which constitute the webs of those spider-like Crustaceans, and thus watch cautiously their prey; and when it is caught in the toils, consume it at their leisure, thus making up by cunning and persevering watching for the want of that strength and force possessed by some of their consimilars. Most of the *Crustacea* would appear, on a careful comparison, to have very distinct analogies with the families of Arachnidans.

The nimble-limbed *Dolomedes*, that run after their prey, and catch them by swiftness of foot, rather than by stratagem, have slender legs, and, living on the ground, are generally of dingy colours; with the exception, however, of those very large and powerful species, which, if not rendered somewhat conspicuous to the sight of other insects, might do too much damage to the tribes they are destined to keep in check; most of these, therefore, have the thorax and abdomen margined with a light colour, that contrasts strongly with that of their bodies. The *Saltici* generally resemble, more or less, the colour of the places they inhabit. I noticed a species among the dense thickets, formed by *Abrus precatoria* and other trees, with a black abdomen, marked on each side with dull scarlet, curious as being the colours of the seeds of *Abrus*, which are called by children "black-a-moor beauties;" those species that live on the bark of trees are mottled grey and brown, and those which you find upon the ground, are altogether black or dingy coloured.

It is an interesting fact, that those gay insects, which love to sun themselves in the open parts of the forests, exposed to view upon the leaves, like the brilliant *Buprestidæ*, and other splendid beetles of the tropics, are glorious in their hues, while dingy-coloured *Coleoptera*, like the *Helluo*, in his funereal dress, hide in obscure holes and corners, where the sight may never reach them. The Necrophagous *Silphidæ*, again, are most commonly of obscure colouring, and conceal their dingy bodies in putrid carcases, while their consimilars, the *Nitidulidæ*, that spend their lives among the gaily-coloured petals of flowering plants, are splendid with metallic tints. In like manner there is a wide difference between those Lamellicorn beetles, which fly by night, like *Lucanus*, or burrow in the ground, like *Geotrupes*, or conceal themselves under dung, like *Aphodius*; and those glittering insects, which, like the *Stephanorina*, *Coryphocera*, and *Cetonia*, revel amid the blossoms of the most lovely flowers.

On the 6th of December, the 'Samarang' was once more anchored in Manila Bay; on the 30th of January, 1846, we again examined the Panagatan shoals, and on the 4th of February, commenced surveying the small islands of Ambolon and Ylin, situated at the south end of Mindoro, one of the Philippines.

The people of this part of Mindoro, privately pursuing piracy, imagined we were possessed of the same propensities. On one occasion, a party armed with bows and arrows, attacked the crew of our jolly-boat; and not far from the principal village of Ylin, some natives shot an arrow at the captain's gig, which fell in the water alongside. On our approaching the village the people were prepared to give us a hostile reception; but on our landing with loaded muskets, they retreated, soon laid aside their useless bows and arrows, and became very good friends. Their fort, situated at the top of a steep hill, was filled with their women, who had run up there for shelter. A market was soon opened, in a large house under the surveillance of the chief of the village, and it was a very amusing sight to see a number of old women bringing in their pigs for sale, tied by a string; others offering tempting bunches of bananas; many praising their fighting-cocks, and others the freshness of their eggs. The scenery from the fort was very beautiful; soft green hills, in many parts crowned with a dense mass of noble trees, extended for miles, in every direction, behind the village.

This is the only time I have seen the bow and arrow in use among the Malayo-Polynesian tribes; and although the Javanese are said by Crawford to be extremely fond of the exercise of the bow and arrow, as an amusement; yet we do not find either the bow, the club, or the sling, among the primitive Dyaks, or any other aborigines of the Indian Islands, except the Bisayan race. At the Bashee Group, the inhabitants of which belong to the same stock as those which people the coasts of Mindoro, although at present an unarmed population, yet retain a recollection of the bow and arrow. We were shown several very long and powerful bows, in the house of the native chief of the mission of San Domingo. Those primitive weapons, the bow and arrow, have given place, among most of the islands, to the more refined invention of shooting envenomed arrows through a long cylindrical tube; and for hand to hand weapons of aggression, they have fashioned the useful iron into kris blades, and the heads of spears. In Crawford's account of an attack made on Manila by the British, in 1762, it is stated that five thousand Indians "presented themselves, armed with javelins, and with bows and arrows, for the relief of the garrison." *

In our survey of Ylin, we occasionally regaled ourselves

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* Hist. Ind. Archipel. vol. ii. p. 475.

with the boiled leaves of the *Colocasia esculenta*, which we found very palatable. One of the seamen, thinking they were equally good in an uncooked state, incautiously chewed some of the leaves, thereby producing great pain and swelling of the tongue, with an inflammation of the fauces, that lasted several days. At Hong-Kong, where the tubers of the same plant are eaten, under the name of Cocoas, several marines came to me with the same symptoms. It is a curious fact, that most edible roots are yielded by plants possessed of poisonous qualities. The Potatoe is allied to the Deadly Nightshade; one species of Sweet-Potatoe, the *Batatas paniculata*, is a violent cathartic; the nutritious *Cassava* and *Tapioca*, are prepared from a root, the expressed juice of which is dangerously poisonous; and it would be easy to multiply examples, proving the same fact. In Hampshire, the poor people gather the leaves of the "Lords-and-Ladies" (*Arum maculatum*), which belongs to the same natural order as the *Colocasia*, and esteem them, when boiled, excellent eating.

A ramble at a little distance from the village, furnished me with a very handsome *Lamia*, allied to *Ceratites*, of a dark-brown colour, with numerous yellow eye-like spots on the elytra, most probably an entirely new species. The dark purple *Pachyrhynchus moniliferus*, with numerous small ultramarine markings on its gibbose elytra, and another species, of a light chesnut-brown, were found clinging to the leaves of the low bushes; and lurking under loose bark, was a species of *Uloma*, one of the *Tenebrionidæ*, with reddish antennæ, and black polished elytra. In the river that runs through the village, I noticed several species of *Melania* and *Neritina*, and one species of *Ampullaria*.

During many agreeable boat-expeditions among these islands, I had numerous opportunities of observing the habits of molluscous animals. I shall only add here, however, a few remarks on the *Mitra* and *Calpurnus*, reserving other details for the 'Zoology of the Samarang,' where figures of the animals of many species of shells will be published.

In its habits, the *Calpurnus (Ovulum verrucosum)* is a very slow-moving, and sluggish mollusk, with all the peculiarities of the Cowries, and exhibits a singularly beautiful and striking appearance under the calm, shallow water, as it glides tranquilly along the bright sandy bottom. The spots on the mantle are much smaller, and more irregular in form, than those on the foot. The head is pure opaque white, with the exception of one large black spot, placed in the centre of the forepart, which, with its large black eyes, and black-tipped tentacles, gives it a very peculiar appearance. It was taken alive by us at the extreme southernmost end of the Island of Mindoro, not far from Ylin, in shallow water, and on a sandy bottom. The *Calpurnus* appears to be rather numerous among these small islets, though, in other parts of the Philippines, I only met with specimens dead, and thrown up along the beach.

For a mollusk furnished with such a heavy shell, the *Ranella* is by no means an inactive animal. It moves with considerable animation, thrusting out its head, protruding its tentacles and proboscis, and ascending even perpendicular surfaces with considerable facility. One species, dredged from twenty fathoms water, was furnished with a very extensive proboscis, which it was able to exsert to the distance of two inches from the head, using it as a perceptive organ, in the same manner as the Elephant does his trunk.

I have observed the animal of *Eulima major*, in the living state, at Looc Bay, in the Philippines, at Cagayan-Sooloo, and at the Panagatan shoals, near Apo Island. This mollusk, which I have described in the 'Annals and Magazine of Natural History,' is slow-moving, and excessively timid, retreating quickly within its shell on the slightest alarm. The animal is entirely of an opaque pearly white; the eyes black, and generally concealed under the front of the shell, as are those small, reflected lobes of the mantle, which produce the polished surface of the *Eulima*; the tentacles are yellow at the tip, orange in the middle, and white at the base. It would remain for hours after capture without moving, and emerge from its polished castle with the utmost caution and distrust.

The old stakes of the numerous fishing wears laid down by the natives among the shallows of these islands, are incrusted with Oysters of a very delicious flavour; and it was a source of much amusement, after the labours of the day were done, to collect a number of these oyster-loaded stakes, and cook them in the fires which we had lighted to cheer our bivouac. Seated in a circle, we watched, with hungry interest, the opening of these delectable mollusks, when scooping out the savoury morsels with our knives, we enjoyed the feast kind nature had provided us.

In the animal of *Lima*, the long, slender finger-like foot, developed from the centre of that portion of the body which includes the viscera, is furnished with the power of producing a tenacious kind of secretion, which hardens in something like the same manner as the cobweb, after leaving the spinneret of the spider, and thus constitutes a temporary kind of byssus; which is somewhat remarkable, as the *Lima* is a most locomotive mollusk, and endowed with as much animation and vivacity as a Pecten; and from another reason that most lamellibranchiate mollusks, which spin a byssus, have the foot in general but very little developed. The *Limæ* usually live quietly at the bottom with the valves widely extended and thrown flat back, like the wings of certain butterflies, when basking in the sun; but when disturbed, they start up, flap their light valves, and move rapidly through the water, by a continued succession of sudden jerks. The cause of alarm over, they bring themselves to an anchor by means of their provisional byssus, which they seem to fix with much care and attention, previously exploring every part of the surface with their singular leech-like foot. When many hundreds of these curious bivalves are seen at the bottom of clear pools, surrounded by living branches of party-coloured coral, their crimson spotted mantles and delicate spiral appendages that fringe the edges, cause them to exhibit a very rich and beautiful appearance.

Although M. Quoy has rightly termed the *Mitra* an "animal apathetique," yet among the Philippines, and in the China Sea, about the low coral islands, I have seen the small longitudinally-ribbed species crawl about pretty briskly over the smooth sand. The *Mitra episcopalis,* probably on account of the small size of its locomotive disc, and the ponderous nature of its long shell, is decidedly a very sluggish mollusk. I have observed some of the auricula-shaped Mitres, that live among the Philippines, in the shallow pools left by the receding tide, crawling about the stones, out of the water, in company with the *Planaxis* and *Quoyia.* The Mitres, however, in general, like many of the larger Volutes, crawl in societies of many dozens, over the sandy mud-flats in shallow water, and are more particularly active just before the flood-tide makes. When the tide recedes, they bury themselves superficially in the yielding soil, and are with difficulty discovered. Some of the small, ribbed species cover themselves entirely with the sandy mud, and in that disguised condition, travel about in comparative security. On one occasion, in the small island of Ambolon, at the south end of Mindoro, I was walking up to my ankles in water, over a firm, sandy mud-flat, taking little notice of the Cones, *Strombi*, *Meleagrinæ*, and Volutes which people the water in great numbers, but looking about anxiously for the rarer Mitres, when I first perceived these small species, under their ingenious disguise, marching in towards the shore, as the tide flowed rapidly over the level surface. Persons, by the way, should never venture in places of this description barefooted, as there is a species of *Pinna* which buries its sharp end in the mud, but leaves the thin, trenchant edges of the gaping extremities exposed, which, when trodden on, inflict very deep and painful incised wounds. Both myself and several of the boat's crew suffered in this way.

The Philippines would seem to harbour the greatest number of these elegant and beautiful shells, although a great many species were obtained by Mr. Cuming in Tropical America. They appear to be chiefly confined to the equatorial regions, scarcely any being natives of cold climates. I have met with several among the Meïa-co-shimah Islands, at Loo-Choo, Japan, and at the Keeling, or Cocos Islands. They are most generally to be found in somewhat shallow water, among the ledges of rocks, between small islands, where the water barely covers the land, and within the shelter of coral reefs, sometimes preferring a clear, sandy bottom, and at other times affecting a hard, muddy, sandy soil. The transversely-ribbed species, such as *Mitra circulata*, are frequently found in very deep water, and many were dredged by us in twenty and thirty fathoms, at Sooloo, and in the China Sea.

The animal of *Mitra circulata*, one of these deep-water species, is very prettily marked. The body is grey, varied with round, well-developed, white spots, and a series of dark-brown blotches, of a pyramidal form, arranged round the lower edge in a Vandyke pattern, and below that, a white rim, with a row of small, linear, horizontal, black spots; the head is white, marbled with grey-brown; the eyes black, and the tentacles white, with a large oval, black spot in their middle; the siphon is brown, edged with black, and with a broad white band at its free extremity. The operculum is very minute, horny, and transparent. In general, however, the Mitres, notwithstanding the elaborate markings of their shells, are not remarkable for bright colours on their bodies.

Another species, with the same habits, the *Mitra circulata*, is semi-opaque-white, faintly mottled with light brown; with the eyes at the outer base of the tentacles, and black.

The animal of *Conohelix*, of Swainson, does not differ from that of *Mitra*. One species, probably new, I have found buried rather deep in the soft, black mud, under the roots of the trees in Mangrove swamps, above high-water mark, in the Island of Basilan. The *C. marmorata* is found in company with many species of Mitres, crawling slowly over the sandy mud, in shallow places, among the Islands of the Philippine Archipelago.

St. Pierre, in his 'Studies of Nature,' * has very truly remarked, that the animals of shells which crawl and travel, and which can, consequently, choose their own asylums, are in general those of the richest colours; such are the gaudily-tinted Nerites, and the polished marbled Cowries; the Olives richly ornamented with three or four colours; and the Harps, which have tints as rich as the most beautiful Tulips; while among the bivalves the vivacious Pectens coloured scarlet and orange, and a host of other travelling shells are impressed with the most lively colours. But those which do not swim, as the Oysters, which are adherent always to the same rocks; or those which are perpetually at anchor in the straits, attached to the stones by their byssi, as the *Pinnas* and Muscles; or those which repose on the bosom of Madrepores, such as the *Arcs*; or those which are entirely buried in the calcareous rocks, as the *Lithodomi*; or those which immovably, by reason of their weight, pave the surface of the reefs, as the *Tridacna*, and those great univalves, such as the *Turbos*; or, in short, those which always remain motionless, like the Limpets, which are attached, by forming a vacuum on the smooth surface of rocks: all these species of shells are of the colour of the bottoms, or floors, which they respectively inhabit, in order, no doubt, that they shall be less perceived by their enemies.

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* Vol. iii. p. 67.

CHAPTER V.

THE SOOLOO AND MOLUCCA ARCHIPELAGOES.

Sooloo—Appearance of the People—Gigantic drum—The Tsjampaka—The Sooloos poison the water—Their fondness for Pearls—Fanciful origin of those concretions—The Sultan's fable respecting them—Sea-Snakes—Origin of "Great Sea-Serpent"—Water Spouts—Shells, and their inhabitants—Apo Island—Malay fishing village—Questionable character of its occupants—Shooting excursion in Basilan—Hostilities in the Island—Habits of Spiders—Curious Shell-fish—Unsang—Wild Animals—Apes — Gigantic Crane—Lace-Lizard—Crocodile—Insects—*Celebes*—Cape Rivers—Marine Animals—Manado—Forest Scenery—Adaptations—Anecdote of a Bee—Curious Insects—Land-Crabs—Habits of Crustaceans—Island of Meyo—Whale—Turtles—Fish — Lizard — Shells — Ternate—The Malukus—Habits of Spiders.

On the 16th of April, 1844, we arrived for the first time at the city of Sooloo, which we again visited in December of the same year, and in February, 1845. The unconquered Sooloos, considered the bravest warriors in these seas, and whose chief city has been termed the "Algiers of the East," invariably go armed, being usually provided with a formidable spear, as well as wearing in their sarongs their ever-constant companion, the murderous kris. The countenance of the Sooloos is not agreeable; there is something more morose, fierce and vindictive-looking about them, than is to be noticed among other varieties of the Malay race. Their figures, moreover, are taller, better proportioned, and of a bolder aspect than those of the generality of Malays. Some of the young girls are very nearly white, and many of them tolerably good-looking; though, as is most generally the case in these countries, they lose their fair proportions, as they advance in years. They manufacture a fine stuff from the fibres of the Plantain, in a very simple and primitive sort of manner, their loom being composed of a few sticks, and the woof being secured around their waists. With this exception, they appear to do nothing but pound *padi* for the use of their lords and masters.

Near the city are numerous grassy plains, where Water-Buffaloes, and a small, well-formed breed of horses graze, in considerable numbers. In the huge, rudely-constructed temple, where the followers of Mahomet meet together, is a gigantic drum, like that one in the city of Brunai, formed of the trunk of an enormous tree, and covered with a buffalo's hide. This summons the Mussulmans to daily prayers, in lieu of the call of the Muezzin. During an audience with the Sultan, I could not help admiring the gorgeous dresses and fine forms of some of these Sooloo warriors, many among them evincing much taste in the selection of their colours, &c. The road to the "Hall of Audience" was rendered very attractive by groves of Cocoa-nut trees, mingled with the fragrant Tsjampaka (*Michelia Champaca*), that splendid member of the Magnolia tribe, the flowers of which, together with the *Nyctanthus*, or Malati, and the Tanjung (*Mnusops elengi*), are worn in the glossy hair of the

Indian maidens; or thrown on the tables, mingled with citron-flowers, and Jasmines, at the banquets of the great, for the delicious perfume exhaled by the petals; and whose foliage affords such a grateful shade in the villages of the Malays in these burning regions.

The men of Sooloo, like the Malays and Bugis of Celebes and Borneo, are passionately fond of cock-fighting, frequently staking the whole of their personal property on the result of a battle. The spurs they use are scythe-shaped, long, sharp, and made of steel, and are sometimes fastened to one leg, and frequently to both. Groups of these arch-pirates, the warlike Sooloos, may be always seen in the mud-streets of their chief city with game-cocks under their arms to be pitted "against all comers," thus fostering their love of fighting and gambling, even in their pastimes. Frequently the owner of the victorious bird carries away, as the prize, the vanquished hero of his brother gamester.

While lying off their city, the Sooloos poisoned the springs, from which the boats of both French and English ships were watering, by throwing into them large quantities of the fruit of the Aran, or Gomuti Palm (*Borassus Gomutus*). After some tons had been brought on board the 'Samarang,' many of the men complained of a painful heat, and stinging sensation of the skin of the hands, legs, and other parts exposed during the duties of this day's service, and the officer commanding the boats, having brought on board some of the fruit, I pointed out the poisonous nature of the pulp, and the water was accordingly started. Fortunately, no serious harm was done, although some of the men who had partaken pretty freely of the poisoned water, complained of excessive thirst, and burning of the throat. The Sooloos employ the same fruit, and another plant, which grows wild, and which they call "Tubli," for the purpose of poisoning fish, in the same manner as the "Butong," or *Barringtonia speciosa,* is used at Samboanga, and the *Tephrosia toxicaria* in Borneo.

The Gomuti Palm, on account of the numerous uses to which it is converted, deserves here a more extended notice. This Palm, besides the names of Aran and Gomuti, is also called sometimes Tuack, Gumatty, or Cabo-Negro. Although the outer covering of the fruit is possessed of such poisonous qualities, yet it is in reality one of the most useful Palms indigenous to the Indian Islands. The interior of the fruit is used as a sweetmeat; the cut extremities of the peduncles of the inflorescence yield "toddy," a cooling, grateful beverage, much patronized by the natives of these thirsty regions; from the toddy, according to Crawford, "the only sugar used by the native population" of Java is prepared; the reticulum at the base of the petioles of the leaves constitutes a kind of Coir, a substance most admirably adapted to the manufacture of cables, and extensively used for cordage of every description. This substance, which is described by Dalrymple in his 'Natural Curiosities of Sooloo,' although an important product of Sooloo, is met with in the finest state at Manado, in Celebes. It is generally confounded with Coir, which is produced from the husk of the Cocoa-nut, and is a substance known to few who have not passed the strait of Malacca, and to fewer still the manner in which it is obtained. Mr. Dalrymple, moreover, informs us that the Cabo-Negro (Black Head) resembles the Cocoa-nut tree in the figure of its leaves and trunk; but the former are of a dead dark green, in comparison with the Cocoa-nut leaves. Like all other Palms it shoots out its leaves at the top only, and as the tree grows up, sheds the lowest. From the lower part, or stalks, of these leaves (which, he observes, form the bark of all Palms) "the *gumatty* shoots out on both sides like black hair, being, in fact, nothing more than the extension of the finest fibres, whereof the stalks and ribs of the leaves are composed: these fibres bind the dead leaves around the tree, so that the trunk has a very odd appearance, being confined in a rough black coat." These leaves being taken off the tree, are stripped of the hair, and it is said the *Gumatty* must be beaten to free it from dirt, and then spread in the sun; two or three days after which, the larger threads, being unfit for cordage, are picked out. The *Gumatty* is black as jet; the hairs extremely strong, and resemble the *Coir*, except that they are longer and finer. The finest hairs make the best cordage, which ought not to be too hard laid; the small hard twigs found mixed up with this material are employed as pens, and form the shafts of the sumpits, or little poisoned arrows; and underneath the reticulum is a soft, silky material, used as tinder by the Chinese, and applied as oakum in caulking the seams of ships; while from the interior of the trunk a kind of Sago is prepared. St. Pierre observes, in speaking with admiration of the Cocoa-nut tree, "Tout le monde sait qu' on y bâtit un vaisseau de son bois, qu'on en fait les voiles avec les feuilles, le mât avec son tronc, les cordages avec l'étoupe, appellée caire, qui entoure son fruit, et qu' on le charge ensuite avec ses Cocos;" but, perhaps, all the world does *not* know that the Gomuti Palm is nearly as valuable.

The people of Sooloo appear to be very fond of amassing pearls and bezoar stones, and there is scarcely a man of any pretensions among them, who will not, after having been in your society a short while, produce mysteriously from the folds of his sarong, two or more of these precious concretions. The pearls are of different sizes and very various in colour. Those from the *Pinna*, are black and red; from the *Tridacna gigas*, dull opaque white; from the *Placuna placenta*, of a lead-colour; from the true Pearl-Oyster (*Meleagrina margaritifera*), they are frequently of a light semi-transparent straw-colour.

Dalrymple, in his account of the pearl-fishery of Sooloo, gives an amusing statement regarding the *Pinnotheres* which inhabit the pearl-shells. He terms them small lobsters, and says there are two in each shell; that their beautiful transparent bodies have red spots, the female white; and that the latter has, under the tail and belly, many eggs, which appeared under the microscope to be "Teepye" shells (Pearl-Oysters). "There is from hence room," he adds, "to conjecture that shell-fish, in general, are generated by such lobsters; for the several species common in the Sooloo Seas, as Manangcy, Teepye, Bato, Capees, Beelong, Bineong, Seedap, &c., &c., I have been assured always have two lobsters, though every species of shell-fish has a distinct species of the lobster." To confirm his hypothesis, by an appeal to the philosophical judgment of the natives, he adds "It was obvious to all the Sooloos, who saw the egg of the Teepye lobster, that it was a proper Teepye; and they were from thence convinced, that these fish are generated in this manner." The Sultan, on this occasion, mentioned a fable they have amongst them. "A monkey sitting very pensive on the shore, with his arms crossed, as they often do, being asked what was the matter, replied; 'He was considering how the Mangancy* are produced.'"

I have detected a species of *Pinnotheres*, hitherto undescribed (*P. orientalis*, Adams and White,) that inhabits the large Avicula so common in these seas.

The Sooloo Seas appear to be swarming with Sea-snakes, perhaps on account of the calmness of the water, and heat of the atmosphere here, which tend to produce astonishing fecundity in the world of waters. Sea-snakes always appear to prefer calms, swimming on the still surface, in an undulating manner, never raising the head much from the surface, or vaulting out of the water. They dive with facility on the approach of danger, but do not appear to be particularly timid. Their progression is tolerably rapid. The Malays term them "Ular gerang." The *Pelamis bicolor* is common all over the China and Indian Seas. I have seen them in the Seas of Mindoro and Sooloo, swimming by thousands on the top of the water. They appear especially to delight in calms, and are fond of eddies and tide-ways where the ripple collects numerous fish and Medusæ, which principally constitute their prey. Their lungs resemble the air-bladders of fishes more than the breathing organs of Reptilia, in general being simple, elongated sacs, with blood-vessels ramifying over their parietes, but having no cells. Their tongue is white and forked, differing in respect of its colour from the tongue of other Snakes which is generally black. The two forks are retractile within the root, and are covered with two horny sheaths which, during the casting of the slough, can be drawn off like the scales of the eyes. In some genera, as *Hydrophis*, there are true poison fangs, but of small size compared with the *Colubri* and others; others are innocuous as the *Chersydrus*, while others (*Pelamis*) have two apertures at the base of the two terminal palatine teeth, which may perhaps serve for the exit of venom. Dr. Cantor says, in speaking of marine serpents, (Annals and Mag. of Nat. Hist. vol. iii. p. 138.) that "all the species are, without exception, highly venomous." Schlegel, also includes the Sea-snakes in his second family of *Venomous Serpents* (page 184 of his Physiognomy of Serpents). Captain Cook in one of his Voyages "saw abundance of Water-snakes, one of which was coming up the side of our ship, and our men beat it off. The Spaniards say there is no cure for such as are bit by them; and one of our blacks happened to fall under that misfortune, and died, notwithstanding the utmost care was taken by our Surgeons to recover him."

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* Mangancy, a kind of Pearl-oyster.

In the Sooloo Seas, I have often witnessed the phenomenon which first gave origin to the marvellous stories of the great Sea-serpent, namely lines of rolling porpoises, resembling a long string of buoys, oftentimes extending seventy, eighty, or a hundred yards. These constitute the so-named protuberances of the monster's back, keep in close single file, progressing rapidly along the calm surface of the water, by a succession of leaps, or demi-vaults forwards, part only of their uncouth forms appearing to the eye. At the same moment of time, I have seen beautifully-banded Water-snakes, of the thickness of a man's leg, lying extended supinely along the glassy surface, or diving and swimming gracefully, with slow undulating, lateral movements of their vertically-compressed bodies.

Waterspouts were very common phenomena, in these beautiful seas, many dozens occurring all around us at the same time. They were of small size, and varied considerably in shape, some being like a trumpet, some like a very wide-mouthed funnel, and some resembling the curved form of the *Cornucopia.*

To give some idea of the splendour in the colouring of tropical fishes, I here copy from my journal the colours of a species of *Balistes*, taken by us at Sooloo. Upper half of body pale brown, with two broad stripes of deeper brown extending backwards towards the dorsal fin; four well-defined and narrow streaks descending posteriorly to anal fin; a bright spot of ultramarine blue round the anus; iris golden; a dark greenish-brown, triangular mark, margined with deep blue, reaching from beneath the eye to the base of the pectoral fin; over the eye and summit of the head, a deep blue colour, with a lighter streak running down before the eye to base of pectoral fin; a bright blue stripe above the upper lip, reaching to the angle of the mouth; from this point to a little below the pectoral fin, a deep orange-yellow stripe; all below this, and on the belly, pure dead white; a pale oval mark on the tail; all the fins light semi-transparent brown. A *Scorpæna*, of a fine brilliant scarlet, and with very poisonous spines, is also very common at Sooloo A *Pegasus*, of a light sea-green, mottled with darker green;

an *Ostracion*, of a light yellow green, with minute black spots; a *Platax* of a pink-brown, spotted with black towards the head, and the rest of the body covered with opaque white spots; and a remarkable sharp-nosed species of *Rhinobatis*, of a dark, rufous-brown colour, were also procured during our sojourn at this place.

Among other interesting contributions to the Conchological collection obtained at Sooloo, the dredge furnished us with a large and handsome new species of *Cardium* (*C. Bechei*, Adams and Reeve).* This, which was from about forty fathoms water, and from a muddy bottom, is of a lovely red-rose colour, with a semi-transparent, thin, soft, velvety epidermis, the anterior and middle portions of the shell smooth, but the posterior part, which is destitute of epidermis, covered with ribs of short compressed spines. Several very large and beautiful specimens of *Conus thalassiarchus*, and a large rare species of *Stomatia*, together with many new and interesting Crustaceans, likewise rewarded our research.

The animal of *Conus aulicus* has the proboscis beautifully varied with red and white, and there is a square and very minute operculum on the dorsal surface of the hinder part of the foot. Its bite produces a venomed wound, accompanied by acute pain, and making a small, deep, triangular mark, which is succeeded by a watery vesicle. At the little island of Meyo, one of the Moluccas, near Ternate, Sir Edward Belcher was bitten by one of these Cones, which suddenly exserted its proboscis as he took it out of the water with his hand, and he compares the sensation he experienced to that produced by the burning of phosphorus under the skin. The instrument which inflicted the wound, in this instance, I conceive must have been the tongue, which in these mollusks, is long, and armed with two ranges of sharp-pointed teeth.

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* Ann. and Mag. Nat. Hist. vol. xix. p. 417.

The Cones become more numerous and more varied in their colours, as we approach the equatorial seas, and they form bright and beautiful ornaments to the shores of tropical islands. They seem to prefer obscure holes in the rocks, where they lead a predatory life, boring into the substance of the shells of other mollusks, for the purpose of sucking the juice from their bodies. They crawl but slowly and usually with their tentacles extended in a straight line before them. They are very timid, and shrink within their shells quickly on the approach of danger. Some affect deep water, and one was dredged by us in the Sunda Straits, in thirty fathoms; and another, the *Conus thalassiarchus*, at Sooloo, in about forty fathoms, as I have before mentioned.

To be convinced of the comparatively trifling importance of the calcareous secretions, called shells, in the philosophical study of the Mollusca, we have only to glance at the different genera of the grand Gasteropodous division, where we shall find the same organization scarcely at all modified by the calcareous deposits, which here assume every variety of form, from a simple, internal, horny, dorsal plate, to a complicated, spiral, turbinated shell. It is only by investigating the structure and peculiarities of the soft parts, and studying the animals as they are seen crawling about, unmolested in their native element, that we can arrive at any distinct notion of their Protean forms, and of their relations one with another.

What can be more different than the shells of *Phorus, Terebellum, Strombus,* and *Rostellaria*? and yet my observations of their animals have proved them to be intimately connected, with the same habits and necessities, and living in the same peculiar manner. Since the labours of Cuvier, Blainville, Gray, and others, naturalists have never doubted the importance of studying the animals that construct the beautiful shells preserved in our cabinets, and which serve the purpose of protecting the more delicate viscera of the inmate, or for affording a safe asylum for their eggs; but the peculiar details of the animals have not been sufficiently made use of as generic and specific distinctions.

The employment of the dredge gave me an opportunity of here first observing the animal of *Ficula,* which very much resembles that of *Dolium* in the large, thin, flattened foot, rounded in front, with two sharp, angular, lateral processes, and extended and acuminated behind; in the long, recurved siphon, and slender, tapering tentacula; in having a long extensile and retractile proboscis; in the position of the organs of vision; and in the general shape, structure, and lightness of the shell; while the singular fact of the mantle covering the sides of the shell, would seem to approximate it to *Calpurnus*, *Ovulum*, *Marginella* and the Cowries.

Although exceedingly timid and sensitive, the *Ficula* is a very lively animal, when observed in its native waters, crawling along with considerable velocity, and, owing probably to the lightness of its shell, able to ascend with facility the sides of a glass vessel, which held it captive. The proboscis is rarely exserted when the animal is in motion; but the long, tapering tentacles are stretched out to their full extent, and the siphon is directed more frequently forwards than over the back of the animal. The animal of *Ficula ficoides* is light, marbled violet, and the head and tentacles are white; six white, opaque spots are arranged round the upper surface of the edge of the foot; the rest of the body is light delicate pink, with marbled markings of a darker pink.

In another species which I observed, and of which I also made a drawing, (the *Ficula lævigata*, Reeve) the mantle is bright pink, mottled with white and deeper pink, the under surface of the ventral disc being of a dark-chocolate colour, with yellow, scattered spots; the head and neck are pink, and also coloured with yellow spots.

The *Ficula* shells, seen in cabinets, convey but a poor idea of these handsome mollusks, observed in the living state, crawling rapidly along, bearing their light, elegantly-formed shells, easily and gracefully, with their siphon erect, their foot expanded, like a broad flattened disc, and their bodies ornamented with delicate colours, beautifully marbled, and moving their long, flat heads, and peering about with their large, bright black eyes, in a manner which is surprising, when one considers the position these animals occupy in the scale of creation, and that but a very small share of intelligence is, in general, supposed to be the lot of most mollusca.

At Sooloo, I first had the good fortune to discover and describe the animal of *Terebellum,* and thus to solve the enigma of the true position of this shell in the conchological system. Although it should be placed, most probably, between *Conus* and *Strombus,* it has been variously situated, in the different systems. Linnæus referred it to the *Bulla* family, that "refuge for the destitute;" Cuvier placed it between *Ovulum* and *Oliva*; Lamark, between *Cypræa* and *Ancillaria*; Férussac, between *Cypræa* and *Terebra*; Blainville between *Conus* and *Oliva*; Latreille, between *Oliva* and *Ancillaria*; and Rang between *Mitra* and *Ancillaria*. The animal is described by me in the 'Annals and Magazine of Nat. Hist.' vol. xix. p. 411.

In its habits the animal of the *Terebellum* is exceedingly shy and timid, retracting its body into the shell on the slightest alarm. It will remain stationary for a long time, moving its tentacles about cautiously in every direction, when, suddenly, it will roll over with its shell, and continue again perfectly quiet. They appear to have all the muscular energy, vivacity, and, doubtless, predatory boldness possessed by the *Strombi*, which they also resemble in their perfectly organized eyes, and quickness of vision. Mr. Cuming informs me he has seen them leap several inches from the ground, exactly as I have seen the animal of *Strombus gibberula*. On one occasion, a beautiful specimen was lost to the above-mentioned enthusiastic collector, by the animal suddenly leaping into the water, as he was holding and admiring it in the palm of his hand. Those I kept in confinement died in a few days, and appeared to be of a more delicate constitution than the hardy Strombus. There appears to be a very trifling muscular connexion between the animal and its shell.

From my observations of the animal of *Terebellum*, I should imagine the spotted variety to be perfectly distinct as a species. In this, which may be called

T. maculosum, the proboscis is of a whitish-brown colour, reddish towards the tip; the body is of an opaque pearly white; the mantle transparent; the foot semi-pellucid white; the ocular peduncles are mottled with dark red; the iris is brown red, and the pupil black. The front of the mantle, edging the anterior part of the shell, is coloured with a black line, forming its margin.

In the common species, *T. subulatum*, the eye-peduncles are punctulated with red-brown, as is likewise the upper and under part of the fore-portion of the body. The body is opaque pearly white, with three large, irregular-shaped red-brown blotches on the fore part. The under-surface of the foot is light brown, with a white cross-like marking of a deeper brown Doubtless, when the animal of the variety covered with zig-zag markings shall have been discovered, it will also be found to be specifically distinct.

We landed one day in April on the little island of Soolaree, in the Sooloo Archipelago, where the Mangrove trees grow in the water along the shores, and strange crabs, and fish of monstrous forms, live beneath their branches. The interior of the island we found to be a salt marsh, in one part forming a lagoon, on whose banks was a pretty little Malay village, peopled by fishermen. Emissaries were sent inviting us to visit their hamlet; and on our proceeding to the spot, we were received by the chief, and some twenty other Malays, all armed with the lance and kris. Having presented him with a trifle, in the form of a handkerchief for the head, he very civilly escorted us to our boats, and affectionately took his leave. These men were probably pirates, and had our force been smaller, their character might have been very different; but there is guile even in a savage! and might with them is ever right. Many a true tale of the crews of merchantmen, slaughtered in cold blood by these merciless freebooters, that constitute the curse of Malayan Asia, might be mentioned in confirmation of this sad truth.

On the 21st of April, 1844, we touched at Basilan, which we also again visited in March, 1845, and March, 1846, on which last occasion I had an opportunity of catching a glimpse of some of the scenery of the island, and thus it happened.

While lying off Passan, a new establishment of the Spaniards on the island, I had occasion to visit the Commandante, who was very ill of fever and dysentery, and after doing him all the good in my power, I was persuaded to remain and spend the day with the Officers in their newly-erected wooden castle. After partaking of a capital dinner, where wine and choice liqueurs were not wanting, on my expressing a wish to obtain some specimens of the Flying-Foxes, which are very numerous in the island, a little expedition was immediately planned, and, in a very short time, a strong party of us started on foot, armed with fowling-pieces, into the interior of the forest behind the fort; and I confess I was amused at the very motley group we formed. One Spanish gentleman, very stout and with enormous moustaches, wore a huge "Sombrero," and carried a thick club-shaped stick; another, a shrivelled little man, with a sharp nose, was dressed in white, even to his hat, which was made of thin pith, and covered with white calico; another carried two guns, and was dressed like a sporting gentleman on the first of September; while another wore a loose blouse, and a wide-brimmed straw hat.

Having advanced a considerable distance into the wood, and traversed some of the most romantic glades I had seen, even in the tropics, without observing anything but a wild pig, and a small species of civet cat, we came to the banks of a small, deep, still, dark-coloured river, with the lofty trees meeting over our heads, and crowded with pigeons. Here, as if to compensate ourselves for our disappointment in not meeting any *Galeopitheci*, we all eagerly commenced firing at the poor doves, and the result was the death of a considerable number, and among them several *Vinagoes*, with splendid metallic-green plumage. While engaged in this recreation, several women and children, with two men, belonging to the hostile parties on the other side of the island, passed timidly by us, and, stepping into a canoe, paddled rapidly out of sight. These poor people had come, at the risk of their lives, with eggs and vegetables for the use of the Spaniards, and I was informed that if their own people were acquainted with the fact, they would all be "krissed." A sharp look out was kept by all our party, for the natives, stealing through the wood, often lie in ambush for those that venture out of the fort, and shoot them; any mode being justifiable in their eyes, in getting rid of their European invaders. One of the Spanish soldiers was shot in this manner two days before. So sudden are the Malays of Basilan, and so secret in their movements, that the Spaniards are constantly on the watch to guard against surprise, and unexpected attacks. Although very large in numbers, and very brave, the natives are easily repulsed on account of their want of fire-arms, and their desultory mode of warfare. The friendly Basilan people I saw reposing in groups about the fort, appeared to be a very fine, and even handsome race, both men and women.

The ground in this part of the forest, was literally over-run with a small black, agile, species of *Lycosa*, many of which had a white, flattened, globose cocoon affixed to the ends of their abdomens. It was most amusing to watch the earnest solicitude with which these jealous mothers protected the cradles of their little ones, allowing themselves to fall into the hands of the enemy, rather than be robbed of the silken nests that contained their helpless progeny. All Spiders are gifted with the same "storgé," or maternal instinct, and resort to various methods for the purpose of securing their cocoons. The *Theridion*, when a seizure of the precious burden is threatened, tumbles, together with it, to the ground, and remains motionless, guarding it with solicitous anxiety; and the *Thomisus* covers the receptacle of its offspring with its body, and when robbed of it, wanders about disconsolate. Did the minute size of these poor Spiders admit of the same psycological dissertations, anecdotes as interesting, no doubt, as those told of the she-bear, when robbed of her cubs, or the violent emotions of the Lioness, when disturbed in her maternal duties, by the hunters in the jungle, might be recorded, proving how strong is the love of offspring, even in animals the most insignificant.

While staying at Basilan, I had an opportunity of observing the animal of *Ovulum volva*, in a living state, and shall shortly mention its habits. The *Radius* is slow and languid in its movements, sliding along deliberately, and is not more sensible to alarm than *Cypræa* or *Calpurnus*.

From the foot being rather narrow, and folded longitudinally upon itself, this animal, no doubt, is in the habit of crawling upon, and adhering to, the slender, round, coral-branches, and fuci, in the manner of certain other *Ovula* and many *Dorididæ.* Dredged in five fathoms from a rocky coral bottom. One barren island rock, not far from Basilan, was covered with vast numbers of *Ostræa crista-galli,* firmly attached by calcareous matter, to the surface of the coral masses, which were pierced, moreover, with *Lithodomi, Petricolæ,* and other boring Mollusks. The sharpened appetites of ourselves and men, were pleasantly appeased by knocking off the upper valves, and devouring the coarse, though not unsavoury contents of these dishes, spread by nature for our entertainment and gratification.

Anchored off the eastern coast of Borneo, in the province of Unsang, for the purpose of surveying, and taking observations, I had an opportunity of examining many new and interesting productions of that little-known Island. On either side of the encampment on shore, was a vast extent of untrodden forest, abounding with wild animals of various descriptions. Tracks of enormous apes appeared in the sands; tiger-cats and lynxes were seen roaming about in the shade of the matted jungle; and boars, of large dimensions, came rooting and grunting in the immediate vicinity of the tents. An adjutant or gigantic Crane (*Ardea Mirabou*), four feet high, was shot, and brought on board; a huge Monitor Lizard (*Hydrosaurus giganteus*), five feet long, and spotted with dull yellow, was also killed and converted into soup. The Crocodile (*Crocodilus biporcatus*), must occasionally attain to a very large size in Borneo, judging from an enormous skull found whitening on the beach. The owner must at least have been twenty-eight feet long.

Among the insects, I noticed, as being most common in this province (Unsang) was a species of *Monochama,* with the elytra elegantly marked with longitudinal, red stripes, alternating with opaque-white stripes marked across with deep black, triangular, spots, and brick-dust-coloured thorax, with three longitudinal black bands. Another truly splendid insect, was a *Catacanthus,* of the subgenus *Chalicoris,* with a scarlet body, and head of burnished green; a thorax of a purple-green with a metallic lustre, having a broad, bright scarlet, semi-lunar, transverse band; the long scutellum, half green and half scarlet, and the elytra white, with green and scarlet marks. Another remarkable form, belonged to *Platyrhinidæ,* a connecting link between the *Curculionidæ* and the *Longicorns.* It was of a dull, dark, olive-brown, with a bronze-coloured head and antennæ, with alternate black and white rings. A species of *Mastax,* allied to *M. vitrea* (West. Arc. Ent. t. 22. f. 2.) but differing in the ends of the elytra being incised, was also procured. This species I have named *M. Whitei,* after that enthusiastic entomologist, Mr. Adam White of the British Museum, to whom I am indebted for the scientific names of many insects previously unknown to me. It is of a dark brown colour, with two transparent white spots near the ends of the elytra, and wings of a light, semi-pellucid brown. A new species of *Scyanus,* entirely of a black colour, with light brown, semi-pellucid wings, and several species of *Reduvius,* a genus which appears in Borneo, and I believe elsewhere, to assume every conceivable modification of montrous form. One species had a yellow body, green thorax, and wings nearly opaque; another had golden-brown wings, and a shining coal-black body. Under the shade of the Casuarina-trees, and burrowing in the ground, was a handsome *Gymnopleurus*, a remarkable looking insect of a black colour, and like all the insects of that family, possessed of enormous strength. To this may be added, a species of *Popilia*, closely allied to the *P. cyanea* of Hope, but most probably a new species; of a bright polished-steel blue, inclining to deep purple, viewed in certain lights; and, in the same locality, under leaves on the ground, was detected a handsome, polished black *Passalus*.

At *Cape Rivers* in the Straits of Macassar, were seen the star-like tentacles of the *Tubipora musica*, of a pale delicate white, striped with light blue, expanded in large masses; the red *Pinnatula*, lying dead upon the beach, with the pellucid plates of the beautiful *Velella* and fragile *Porpita*; the elegant jointed *Isis*, throwing its branches in every direction, among large beds of other corals, and various madrepores strewing the margins of the pools. The large and ugly "biche de mer" (*Holothuria tremula*), lay extended on the sandy patches, and, to every stone, the sea anemonies, with their brilliant tentacles, were exploring the warm, shallow waters for their food. The dark and slug-like bodies of *Parmophori*, and the crawling forms of *Stomatellæ*, were seen moving and sliding among the coral beds, while scarce a stone was turned, without observing *Chitonelli* crawling on the under surface. In every part where solid rock was seen, the bright, blue branchiæ of *Tridacnæ* were visible in their stony houses, while crabs, of every form, were found concealed in corners, greedy, rapacious, and devouring.

There is some very fine forest scenery in Celebes. I have wandered several times in the uninhabited parts of the coasts for whole days, with no other company than my own thoughts, and the sights and sounds of nature. I have already endeavoured to picture the forests of Borneo: those of Celebes are very similar. The trunks and branches of the trees here, as elsewhere in the Tropics, are covered with *Bauhiniæ*, and other huge climbing plants, which suspend themselves, like monstrous serpents, from the trees, twisting their folds sometimes so tight as to strangle and eventually destroy the plants they embrace; on every side you notice that fragrant

> "parasites
> Starr'd with ten thousand blossoms, flow around
> The grey trunks;"

gigantic *Lycopodiaceæ*, or club mosses, are frequently met with, rearing their elegant heads from among the damp beds of decaying leaves; the prostrate trunks are covered with *Opegræphæ*, and other Lichenoid plants, which spread their distempered-looking *thalli* over the loose bark; while on the shaded side, and often concealed by the tree, minute and delicately formed *Fungi* of the most extravagant forms, live their little hour, and are succeeded by a crop equally as ephemeral. Bamboo thickets are common in some parts, and the slender branches, and light quivering leaves, produce those peculiar changing shadows you often see in dense forests where the sun partially shines through the foliage; a fact which did not escape the observant eye of the Bard of Avon;

in 'Titus Andronicus,' he thus alludes to this peculiarity:—

> "The green leaves quiver with the cooling wind
> And make a chequered shadow on the ground."

I have frequently seen the Bamboo, that magnificent member of the grassy-tribe, waving aloft its feathery sprays in groves, more than forty feet high. The appearance of the epiphytic vegetation, in these forests, exactly resembles, in some spots, the vineyards full of trees so eloquently mentioned by Dickens:—"The wild festoons; the elegant wreaths, and crowns, and garlands of all shapes; the fairy nets flung over great trees, and making them prisoners in sport; the tumbled heaps and mounds of exquisite shapes upon the ground; how rich and beautiful they are! And every now and then, a long, long line of trees will be all bound and garlanded together, as if they had taken hold of one another, and were coming dancing down the field!"*

What must ever strike a European observer in tropical forests, is the singular want of any of those autumnal signs of partial decay, or vernal indications of gradual development, seen in climes more temperate. There are no mellow tints, or boughs covered with young green buds; no red withered leaves falling from the trees; but always renovation and dissolution, always the same quantity of dead rotting leaves, and the same dense mass of dark green foliage, wherever the woods are entered, whether in the dry or rainy season. In many parts of these forests I noticed a vast number of *Fungi*, those scavengers of the vegetable kingdom, which insignificant, and unpretending, spring up on every fallen tree, and, disguised under a thousand grotesque forms, prey upon, and consume the decayed and putrefying wood. But though these tall trees, shorn of all their pride and beauty, as the poet Shelley says, in his poem of 'Queen Mab,' in a beautiful simile:—

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* Pictures from Italy, p. 90.

> "Lie level with the earth to moulder there,
> They fertilize the land they long deformed;
> Till from the breathing lawn a forest springs
> Of youth, integrity, and loveliness,
> Like that which gave it life, to spring and die."

Whatever of grand or beautiful may be seen in the forests of the torrid zone, yet the observer of nature, if he be of European origin, will always sigh in vain for certain simple signs of landscape scenery, and woodland peculiarities once familiar to him in other lands. Where will he find in Borneo or Celebes, commons covered with purple blooming Heather, or brown dusky glens ornamented with the drooping bells of the Fox-glove, or snug little coppices where the Wild Rose and the Hawthorn mingle with the graceful Ash and silver-barked Birch? Sombre, dense, and towering masses of foliage, trees beyond trees in never ending avenues; these take the place of more lively rural scenes. And among the feathered race, what birds, however gaudy their plumage, or vivacious their movements, can vie with pretty Cock-robin, the saucy Jay, or the pert chattering Magpie with its long black tail? Can the harsh scream of the Parrot compare with the sweet melody of our summer songsters, their plaintive monotony, or shrill pipings, or even with the clamorous cawings of the Rooks that build their nests on the tall Elm trees?

What can be more delightful, than to enter a forest abounding in examples, for the purpose of satisfying your mind whether there is any truth in the statement that the tongues and jaws of Lepidopterous insects, or Butterflies, are adapted in length to the corollas of the flowers they suck; so that a tubular blossom is rifled by an elongated proboscis, and a salver-shaped corolla by a short obtuse muzzle. In the Silk-worm Moths, which do not require food in the Imago state, the mouth is not developed; but in the Humming-bird Hawk-moth, which hovers about tubular flowers, and greedily extracts the nectar, the tongue is of enormous length.

The beautiful adaptation of insects, at large, to the flowers on which they feed, is well shown by St. Pierre, in the Bee. He observes:—"Nous voyons avec plaisir les relations de la trompe d'une *abeille* avec les nectaires des fleurs; celles de ses cuisses creusées en cuillers et hérissées de poils, avec les poussières des étamines qu'elle y entasse; celle de ses quatre ailes, avec le butin dont elle est chargée; enfin l'usage du long aiguillon qu'elle en a reçu pour la défense de son bien."*

During a stroll one day into the forest of Celebes, I was very much struck with the ingenuity of a large species of Bee, which frequented, in great numbers, a tree loaded with monopetalous corollas, furnished with a very long tube. The slender trunk of the Bee was, doubtless, too short to reach the honied store concealed in the nectary at the bottom, and therefore its "long, narrow pump," as Paley terms the promuscis of Hymenopterous insects, was of no avail; our Bee, nothing daunted, sawed through the base of the corolla, where it joins the calyx, with its fore legs, and then shoving it to the ground with its head, sucked up the honey "ad libitum." Speaking of the Bee, Paley observes, "The harmless plunderer rifles the sweets, but leaves the flower uninjured;" this wicked insect, however, not only robs the blossom of its nectar, but leaves ruin behind. Many years ago, I remember noticing that the Humble-Bee of England, as he

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* Etudes de la Nature.

"Sits on the bloom, extracting liquid sweets,"

employs frequently his feet for the same purpose, in cases where the tube of the corolla is of greater length than usual; as, for example in the Jasmine.

In the forests of Celebes, I procured, also among many other insects, two *Elaters*, one with yellowish-brown elytra, and the other with the wing-cases covered with mouse-coloured hair; a *Languria*, with a green head, an orange thorax, and burnished green elytra, marked with punctulated, longitudinal striæ; a *Lucanus*, of a tawny yellow colour, with a reddish-brown head, and three black marks on the thorax, and the elytra margined with black; an *Anthribidous* of a greenish-ash colour, with dull, opaque, dark, black markings; an *Elater* of the genus *Calais*, Laporte, *Alaus*, Eschsch; most probably a new species, with the head and body covered with a hoary pubescence, and on the thorax, a large, shining, longitudinal, oval, black spot, and four smaller round spots arranged about it, and the elytra marbled and mottled with black; a *Cicindela*, very near *C. Chinensis*, of a dull sap green, and yellow marks on the elytra; a remarkable species of *Apocyrtus*, of an ash colour, covered with minute black spots; a *Micraspis*, one of the *Coccinellidæ*, with bright orange elytra, margined at their inner edges, with black, and having a large, curved, linear, black mark in the centre of each. To these may be added a *Galeruca*, of a pale straw colour, with black spots on the thorax; a *Languria*, with a reddish-brown head, and dark metallic green, brightly polished elytra, which alights on the blades of the *Zea mays*, and leaves of other plants, in open sunny places, and is very active on the wing; a curious genus of *Anthribidæ*, entirely covered, when alive, with a white mealy powder, which, when rubbed off, leaves the elytra of a dark gray, and shows longitudinal rows of alveoli, or pits; an *Agrilus*, with a brilliant green head, and dark bronzed, black elytra, and a body of the most vivid blue, which flies rapidly, and alights to sun itself on leaves; an *Anthraxia* of a burnished emerald green, which is very active in its motions, alighting on the leaves and stalks of plants in the sunny glades of the forest. Besides these, a *Brentus* of a red chesnut brown, and highly polished body struck me as being a most remarkable form among the Coleoptera, which abound in these woods, so fecund in these "resuscitated worms," as Cowper terms insects in their perfect state.

Near Manado, there is a woody tract, not far from the river that runs through the town, which abounds in *Gelasimi* of the most beautiful colours. I have described and figured one species, allied to *G. bellator* (White), of a green colour, with black markings; another, black, with two bright ultramarine spots in the centre of the carapace; and another grey, marbled with white, with an enormous light yellow chela. These cover the ground by thousands, stalking about and holding up their single huge claws in a most ridiculous manner. Notwithstanding, they appear to be overburdened with this unwieldly member, they are by no means easy to capture; but on the slightest attempt upon their liberty they run quickly to the mouth of their burrows for protection, where they will boldly wait and see if the enemy makes any further advances; and, if he does, they retreat quickly backwards, holding out their pincer as a weapon of defence. In the pools of fresh water, and under damp stones, a dark olive-green *Sesarma*, with bright yellow blotches, may be seen concealed; but on the slightest attempt to take the stranger captive, he is off with the greatest velocity, darting under the leaves, and scrambling over sticks, until he finds security either in a hole of the ground, or under the mud of the pools; while on the coast, the observer cannot fail to be delighted and amused with the elegant and agile *Thelphusa grapsoides*, which, by its beauty and brilliancy, gives life and animation to the coral flats, left dry by the receding tide.

Another Crab, which appears to be rather common also, among the Philippines, is the *Chasmagnathus convexus* (De Haan). It lives in the firm black mud of Manila Bay, and in other parts of Luzon, in company with the *Lingula anatina* and *Arca inequivalvis.* Like the *Xenophthalmus pinnotheroides* (White), it doubtless forms oblique, cylindrical holes in the surface of the mud, somewhat in the manner of the *Macrophthalmi*, and *Scopimera globosa.*

On the 23rd we arrived at the little island of Meyo, which appears to be not very long recovered from a state of volcanic sterility, bearing scarcely any traces of vegetation on its blackened, scoriaceous surface. The light porous rock, that composes the principal part of the island, is raised in heaps of jagged points and pinnacles, and has, altogether a most unpromising appearance to the naturalist; and yet, even on such a barren spot as this, nature holds out some objects for our entertainment.

As the boat approached the abrupt and barren shore, a young Whale bared its back, and spouted close alongside of us; and a little nearer the island, two Turtles, of the right sort, came floating by, with lazy, flapping fins, and narrowly escaped being turned into soup by the boat's crew. Close in shore, myriads of banded *Chætodons* and party-coloured *Scari* glided through the calm water among the rocks; and, as we landed, a large black Lizard, a species of *Hydrosaurus*, upwards of four feet long, scaled the rocks immediately above us. On the right, heavy rollers came tumbling in from seaward, between huge perpendicular rocks, rushing impetuously through a wide, time-worn chasm, and receding as violently as they entered, forming a perfect "Maelstrom," and looking like the interior of some enormous caldron, in a state of ebullition. In another part, the sea recedes, and leaves exposed a long, flat, stony beach, with shallow pools, dug in the rock, abounding with small fish and molluscous animals of various descriptions. The large and showy *Cypræa tigris* was here seen crawling about by hundreds, generally in the shade of the steep banks of the ponds, or hiding away in crevices. *Trochi* and *Turbines*, *Cones*, and *Turbinellæ* were equally numerous, and offered, as may be readily supposed, a rich treat to the conchologist, who walking among them as they gemmed the rocks, like so many animated flowers, gathered the prettiest and most brilliant, leaving the others to pursue their nearly vegetable lives unmolested.

Among the fish procured by me in the pools left by the tide on the shores of this little island, was a *Scorpæna* of a dark, mottled brown, with darker grey-brown spots, and a light brown belly; a *Chætodon*, of a blue silvery grey, darker, and with a greenish tinge towards the back, and a bright silvery belly; a *Blennius*, of a dark olive green, rufous towards the head, and greyish towards the back, and both body and fins covered with vivid, linear, ultramarine spots and markings; and a species of *Hippus*, with a blue-grey body, darker towards the dorsal region, and with broad oblique bands of black and white on the tail.

Our very brief sojourn among the Spice Islands did not enable us to gather much information concerning the inhabitants of that group; but from those I had an opportunity of observing at Ternate and Gilolo, I should say that they are of a darker brown than the Malays, with larger heads, longer upper lips, smaller and more sunken eyes, and broader and flatter noses; but these observations may not be generally characteristic among the entire population, but apply to individuals only. They are called Malukus of which the term Moluccas appears to be only a corruption. There were many of this race of men among the Illañons on board the fleet of prahus that attacked the Samarang's barge and gig off the Island of Gilolo, as was proved by the capture of their shields which are narrow, bent in the form of an arc, made of hard black wood, inlaid with bits of shell and mother of pearl, and provided with a single handle, placed in the centre, by which it is held; while the Illañon shield is very large and wide, and of an entirely different construction. The Malukus speak the Tarnata, the language of the Moluccas, the name of which is evidently derived from Ternate. Once free and formidable as pirates, these natives in times past must have offered a curious example of a paradise peopled by devils; of a group of islands probably the most delicious in the world, with a soil the most fecund, abounding in spices and other commodities of enormous commercial value; enjoying a climate at once healthful and undisturbed by hurricanes or violent alternations of temperature; but, alas! inhabited by a set of fierce, vindictive, blood-thirsty savages, whose only delight was in rapine and murder. They are now fortunately almost deprived of the power to injure, are reduced to a state of servile vassalage, and even their Rajahs are but regal slaves, whose pomp and state are maintained by the dollars of the Dutch.

Mr. Brooke in his Journal gives a short account of the war-dance of the Malukus, which he witnessed at Sarãwak. He observes that it is of a more gentle nature than that of the Illañons of Mindanao, and that instead of the sword or "kempilan," they prefer the spear, advancing with it stealthily, casting it, and then retreating with the sword and shield. The dancers mad with rage and opium, whom we observed stamping, turning, and yelling on the fighting-deck of the pirate prahus, during our engagement, were most probably Illañon "Datus," or "free men," commanding the expedition. Mr. Brooke states that the sword of the Malukus of Gilolo is similar to that of the Moskokos of Boni Bay, in Celebes.

At the Island of Ternate, I made a capture of a large and splendid undescribed species of *Nephila*, which spins a very wide, strong web among the bamboos. The body is liver-coloured, with a silver horse-shoe mark; the thorax is covered with a downy, hoary pubescence; the shanks of the tibiæ of the two first pairs of legs, have a broad yellowish-white band; the other legs are black. Besides this, I have drawings of numbers of species not yet described, as I always took an interest in these remarkable insects. Spiders are among the most artful of living creatures; their whole life consists of one unvaried course of craft and stratagem; whether they sneak about on the surface of leaves, as green as their own emerald bodies, and surprise the poor flies that venture to approach within the range of their fatal spring; whether they gloomily lurk in dusky holes, or under the shade of dingy tents, and spring upon unwary insects that chance to pass their door; whether they lie supine in the broad daylight, motionless, in their wide-spread treacherous toils, and having seen their victim fairly entangled, wrap him up in a winding-sheet of their own manufacture; or whether, simulating the surface of the ground on which they live, they course their prey with untiring assiduity, and, having run it down, suck its blood with tiger-like ferocity. In the Island of Panagatan, I made a capture of another species of *Nephila*, which I also consider as undescribed. The head is blackish; thorax silvery, with black spots, and covered with a downy pubescence; legs chesnut-red, with the last joints black. The body is of a light emerald green, with numerous bright yellow spots. The under-surface is dull black. It forms a large, strong, geometrical web, spreading from bush to bush, in the centre of which it remains motionless, with legs stretched out, and the head downwards. In a beautiful wood behind Calderas, in Mindanao, I observed a dingy little species of Spider, of the genus *Clubiona,* concealing itself in very snug retreats, formed out of a dead leaf, rolled round in the shape of a cylinder, lined with a soft silken tissue, and closed at one end by means of a strong, woven felt door. When hunted, it was amusing to see the frightened little creatures run for protection into their tiny castles, where they would doubtless be safe from the attacks of birds, owing to the leaves not being distinguishable from others that strew the ground.

CHAPTER VI.

SINGAPORE AND BORNEO.

Singapore—The Sensitive Plant—The Nutmeg Tree—Gutta Percha—Trees yielding Caoutchouc—Jatropha Manihot—Gambier—Useful Plants—Lizards and other Animals—An Opium-smoker—Effects of Opium on the brain—Royal Children—Curious mode of catching Snakes—The Sun-birds—A Tree Slug—Cerithia—Dragon-flies—Nondescript Spider—Remarkable Caterpillar—The Horse-shoe Crab—A Land Lobster—*Borneo*—Excursion up the Linga—Scenery—Insects—The Long-nosed Monkey—Village of Bunting—The Balows—Dried Human Heads—Diseases—Excursion to Tungong—Native Boar-hunt—Singular Fish—Crabs and Shells—Land-Crabs—Habits of Crustaceans.

On the 28th of June, 1844, we were again at Singapore, or, as the Malays term it, Singhapura, where we remained sufficiently long for us to examine some of the numerous objects of interest peculiar to this important little island. Rambles, in any direction, always well repay the naturalist; and a walk, even in the immediate vicinity of the town, is very agreeable. In some parts you will find the ground covered with the Sensitive plant (*Mimosa pudica*), and, as you walk along, you leave a quivering track behind you, caused by the shrinking of a thousand leaflets, making you almost believe, with Darwin and Dutrochet, that plants indeed have feeling; and tempting you to exclaim with the poet Wordsworth,

> "It is my faith that every flower
> Enjoys the air it breathes."

The Nutmeg tree (*Myristica officinalis*, Linn.) appears to thrive equally as well in this island as at Pulo Penang; and everywhere around you, if you wander a little to the back of the town, you will perceive plantations of these valuable trees, which, disposed in clumps, have a very pretty appearance, particularly when the large green fleshy pear-shaped fruits have burst, and the crimson aril, or mace, shows ruddy through the fissure in the rind. The bark abounds in a yellow juice; the long shining oval leaves are powerfully aromatic when bruised; and the inflorescence consists of axillary racemes of small green flowers, the males having thick, cup-shaped calices, and the filaments united together, and the females possessing a solitary pistil, with a very short style. The oval seeds, or nutmegs, are stripped, like ripe walnuts, of their fleshy valves; the aril or mace is carefully removed, and spread on mats to dry; and the nuts, with their hard oval shells, are placed in lofts, under which fires are kept burning; but are not steeped in lime-water for the purpose of protecting them from insects, as is done in some countries. A few Clove trees (*Caryophyllus aromaticus*, Linn.) seem to thrive tolerably well, but they have not been very extensively introduced. In an excursion into the woods of the interior, I had an opportunity of observing the tree which yields the material called Gutta Percha, although properly speaking, the first word should be written "Gatah," which is the Malay name for any gummy exudation, and is likewise applied by them to the Dammar and Gambier. The tree (*Icosandra gutta percha*) belongs to the Natural Order *Sapotaceæ*, and has lately been described by Sir W. J. Hooker. It is a large, high tree, with a dense crown of rather small dark green leaves, and a round smooth trunk. On incising the bark with a chopping-knife, a quantity of rather thin white milky fluid exudes, which gradually hardens on coming in contact with the air, in which state it is the Gutta Percha of commerce. A West Indian tree belonging to the same tribe, *Achras Sapota*, abounds in a thick white tenacious milk, which might possibly be applied to similar purposes; and another Sapotaceous plant, the *Bassia longifolia*, also yields a milky sap, which is used on the continent of India in rheumatic affections. The sap of *Icosandra* is not viscid and tenacious like that of the *Ficus elastica*, which is common in Borneo, and of the other trees which yield a similar substance, as the *Urceola elastica*, which grows at Penang, and affords an excellent kind of caoutchouc, and that other climbing plant, *Willoughbeia edulis*, which is found in the same island, but produces a very indifferent sort. The advantage the Gutta Percha seems to have over the other descriptions of caoutchouc, appears to consist in its great tenacity, and in its retaining its form and solidity, even in the tropics; but on the other hand, it wants elasticity. It is easily moulded into any form, by steeping it in hot water, and forms very good catheters, bougies, soles of shoes, riding-whips, gas pipes, ornaments for picture-frames, &c. Several other plants yield sap with similar useful properties, as the *Hevea Guianensis*, which produces the Demerara and Surinam caoutchouc, and the Bastard Manchineel tree (*Cameraria latifolia*), which is common in Cuba, and other West Indian Islands. In the plantations about Singapore you will see the *Jatropha Manihot*, with its white, brittle, warty stems, and large, deeply-divided, heart-shaped leaves; a plant which yields, at the same time, a dangerously poisonous juice, and a wholesome fecula, which, in South America, forms an important article of diet, under the name of *Cassava*; the useful Gomuti Palm, and graceful Plantain, the elegant, feathery Bamboo, the Betel, and the climbing Yam, mingled with Papayas, Citron, and Lime trees, and various useful Scitamineous plants, as the Turmeric and the Ginger, may be also mentioned; nor must that very important Cinchonaceous plant, the *Uncaria Gambir*, which yields the substance named *Terra Japonica*, a kind of Catechu, be omitted; the extract being most extensively employed by the Malays, mixed with Betel leaf, *Areca* nut, and Lime, as a masticatory. At Singapore, the Malay fishermen make a very strong cordage out of the leaves of the *Pandanus lævis*; and here, as elsewhere, among the Eastern Islands, the leaves of the *Nipa fruticans* are universally used for thatching their primitive and fragile dwellings. The island, moreover, abounds in Pine Apples of several varieties, the common sort, in my opinion, being the best flavoured; the long, red, conical ones being the next in esteem; and those with variegated leaves being the worst of all.

Among the dry, withered leaves that strew the ground, hundreds of large, brown, shining Lizards rush about with the greatest velocity, reminding the timid of the rustling of serpents beneath their feet; and, in the trees, the flying Squirrel (*Pteromys Petaurista*) or, by a rarer chance, the beautiful *Galeopithecus variegatus* may be seen towards the evening, besides the pretty little active *Tupaia Tana*, and Squirrels and Monkeys of one or two descriptions. Many rare animals may occasionally be observed confined in the menagerie of the Governor, and other places; I have seen the black variety of the Leopard, the Orang-Utan, and Wou-Wou, the Argus Pheasant, Black Cockatoo, and several large *Pythons*, exhibited in this manner; the Dugong has been caught off the island, and I have seen the Sword-fish in the boats of the fishermen, who also bring off for sale numbers of 'Neptune's Cups,' a species of *Alcyonum*, and vast quantities of Corals and shells; among the latter, *Aspergilla*, *Fistulanæ*, *Cardissæ*, *Lithodomi*, and *Gastrochænæ* are very numerous.

In a certain large Caravansary, belonging to the Malay village near Singapore, a place where Buffaloes and Goats occupy the centre, and where pallets are arranged around for its human occupants, I had a good opportunity of observing the effects of Opium on the physical aspect of the Malay. I was particularly struck with one old confirmed Opium-smoker, with whom I enjoyed a "hubble-bubble." He was a feeble worn-out old man, with an unearthly brilliancy in his eye. His body was bent forwards, and greatly emaciated; his face was shrunken, wan, and haggard; his long skinny arm, wasted fingers, and sharp-pointed nails, resembled more the claw of some rapacious bird, than the hand of a lord of creation; his head was nodding and tremulous, his skin wrinkled and yellow, and his teeth were a few decayed, pointed, and black-stained fangs. As I approached him he raised his body from the mat on which he was reposing, and filling an antiquated pipe with tobacco, courteously presented it for my acceptance. There was something interesting, and, at the same time, melancholy, in the physique of this old man, who, now in rags, appeared from the silver ornaments he wore, and by his embroidered jacket, to have been formerly a person of some consideration; but the fascinating influence of the deadly drug had fastened on him, and a pallet in a Caravansary was the reward of self-indulgence. In my experience of Opium, which has not, however, been very extensive, I cannot say I found as much pleasure as De Quincy, the "English Opium Eater," in his 'Confessions,' would lead us to believe fell to his lot. After three or four Chinese Opium-pipes, I found my brain very much unsettled, and teeming with thoughts, ill-arranged, and pursuing each other in wanton dreamy play, without order or connexion; the circulating system being, at the same time, much excited, the frame tremulous, the eye-balls fixed, and a peculiar and agreeable thrilling sensation extending along the nerves. The same succession of image crowding upon image, and thoughts revelling in strange disorder, continues for some time, during which a person appears to be in the condition of the madman alluded to by Dryden, in his play of the 'Spanish Friar:'—

> "He raves, his words are loose
> As heaps of sand, and scattering wide from sense;
> So high he's mounted on his airy throne,
> That now the wind has got into his head,
> And turned his brains to frenzy."

Unutterable melancholy feelings succeed to this somewhat pleasurable period of excitement, but a soft languor steals shortly across the senses, and the half-poisoned individual falls asleep. The next day there is great nausea and sickness of stomach, headache, and tormenting thirst, which makes you curse Opium, and exclaim with Shakespeare's King John :—

> "And none of you will bid the winter come
> To thrust his icy fingers in my maw :
> Nor let my kingdom's rivers take their course
> Thro' my burnt bosom ; nor intreat the North
> To make his bleak winds kiss my parched lips,
> And comfort me with cold."

At the residence of the Ex-Rajah of Singapore, I was introduced to a young Prince and Princess, children, as as I was informed, of the Rajah, and likewise to their mother. These scions of departed royalty were perfectly naked, and adorned with silver ornaments; the boy wearing an amulet about his neck, and rings on his arms and legs; and the girl having an ornamented silver heart-shaped fig-leaf depending in front, and attached by a silver chain around the hips. They were both very pretty children, and good-tempered; but I observed that young as he was, perhaps not more than five years old, this small brown prince had commenced the habit of chewing the betel-nut and sïrih leaf; for his lips and teeth were already stained with the universal masticatory.

In an excursion with Sir Edward Belcher and Dr. Oxley into the interior of the island, for the purpose of collecting some of the numerous and beautiful epiphytic Orchids that abound in the forest, I noticed a very novel and ingenious method of capturing snakes. A small, but highly-venomous reptile of this description, of a bright green colour, having a row of white spots along the sides, and with the triangular head, and enormous fangs, which characterize the genus *Trigono cephalus*, was detected by Sir Edward peeping from among the tangled leaves of a bunch of *Epidendra*, which he was about to gather. On pointing it out to our Malay attendants, one of them immediately procured a long tapering twig, and formed a running noose out of a fine grass, which being fashioned according to his satisfaction, he passed it over the extended head of the reptile, drew the knot tight, and thus secured the prize, which I immediately seized between the finger and thumb, and divided the spinal cord with the point of a pen-knife; for the natives, if they could have had their way, would have crushed the head, and so ruined the specimen,

At Singapore I first had the pleasure of observing those tiny paragons of the East, the Sun-birds (*Cinnyris*), which, like their brilliant representatives of the West, are etherial, gay, and sprightly in their motions, flitting briskly from flower to flower, and assuming a thousand lively and agreeable attitudes. As the sunbeams glitter on their bodies, they sparkle like so many precious stones, and exhibit, as they turn, a variety of bright and iridescent hues, "like atoms of the rainbow fluttering round," as a poet has described them. As they hover round the honey-laden blossoms, they vibrate rapidly their tiny pinions, producing in the air, a slight whirring sound, but not so loud as the humming noise produced by the wings of the *Trochilidæ*. Occasionally, I have seen them clinging by their feet and tail, busily engaged in rifling, of their insects and nectar, the blossoms of the trees; in the stomachs of many which I examined, were the partially-digested remains of dipterous, coleopterous, and tetrapterous insects. These lovely and active little ornaments of the feathered tribe serve, by the rapidity of their movements, and the brilliancy of their colours, materially to enliven the monotony of a noon-day walk. I well remember a certain dark-leaved tree with scarlet, tubular flowers, that especially courted the attention of the Sun-birds, and around its blossoms they continually darted with eager and vivacious movements. In the course of an hour's watching, I have counted more than a dozen different species of *Cinnyris*, *Nectarinea*, and *Certhia*, coming and going to and from this honied banquet. The Sun-birds seemed particularly delighted, clinging to the slender twigs, and coquetting with the flowers, thrusting in their slender beaks, and probing with their brush-like tongues, for insects and nectar, hanging suspended by their feet, throwing back their little glossy heads, chasing each other on giddy wing, and flirting and twittering, the gayest of the gay. Some were emerald green, some vivid violet, and others yellow with a crimson wing. In the vicinity of this tree, which was in the town, were numbers of Sparrows, in their every-day dress, apparently engaged in disdainfully contemplating these gaudy-coloured birds of pleasure. Darwin's capital description of the Humming-bird applies also to the *Cinnyrides*:—

> "So where the Humming-bird in Chili's bowers,
> On murmuring pinions, robs the pendent flowers;
> Seeks where fine pores their dulcet balm distil,
> And sucks the treasure with proboscis-bill."*

Among molluscous animals, the *Onchidium* of Singapore offers a curious instance of what may be termed an Arboreal Slug. It is a limaciform animal, which is found crawling among the foliage of the trees in the woods, and appearing more particularly after heavy showers. During the heat of the day it collapses its broad, flattened body, and retires under the shade of large leaves, where it remains apparently in a half-torpid condition. It leaves no slimy trail behind, when it crawls, as the Limax and Snail do. It is of a chesnut-brown colour, minutely tuberculated, with numerous small, dark, scattered spots, and with the raised middle line of a pale brown; the eyes are terminal on the long superior pair of tentacles.

Another remarkable molluscous form is the *Cerithium truncatum*, which is found generally in brackish water in Mangrove swamps, and the mouths of rivers. Some times it crawls on the stones and leaves in the neighbourhood, and sometimes it is found suspended by glutinous threads to the boughs of trees, and from the roots of the Mangroves. The animal of *Megalamastoma suspensum* has been found in the West Indies, by the Rev. Lansdowne Guilding, hanging from trees in the same manner; and Mr. Gray states that he has found the *Rissoa* similarly suspended. There is another very handsome species, closely allied to the preceding, which I have frequently found crawling in a slow and languid manner on the leaves of the *Pontedera,* and of *Calami* and Sedges, found among the fluviatile marshes, and on the low banks of rivers in several parts of Borneo, even many miles in the interior, where the water is perfectly fresh. In this species, the eyes are likewise terminal; the proboscis is elegantly marked with crimson and yellow; there is a vivid scarlet edge extending round the lower part of the body, where it joins the foot; the under surface of which latter part is of a dark brown. They live, in general, quite out of the water, and have a very pretty appearance when seen crawling among the leaves.

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* Botanic Garden.

In the insect world nothing surprised me more than the large number of *Libelulæ,* and analogous forms of *Neuroptera.* Dragon-flies, however, are not only numerous here, but in China, and among all the islands of the Eastern seas. On every barren bank, on every flowery plain, over oozy bogs and stagnant pools, may be seen all day long, flitting on their untiring wings of gauze, these beautiful creatures, or as Shakespeare would term them:—

> "Those gay creatures of the element,
> That in the colours of the rainbow live,
> And play i' the plighted clouds."

Volatile and erratic, their chief resort is about some dull, sequestered pool, where rank weeds luxuriate, and where, springing from the mud and slime, the air teems with living forms. These are the food of the Dragon-fly, and in their pursuit and capture consist his pastime and delight. I have frequently regarded with astonishment the dexterity of the little Dyak boys, who catch these sprightly *Neuroptera* by means of a noose formed of human hair, and fastened to the end of a long, slender stick. They will lassoo adroitly their tiny game, and bring them to you with the hair neatly secured around the insect's neck, which does not prevent it from fluttering about, to the great delight of its captor; for boys are cruel, even in a state of nature.

In the woods of Singapore I made captive a very large and handsome species of *Nephila,* which I do not find described. The thorax is covered with a rich golden pubescence; the terminal half of the palpi are deep black, the proximate half red above, and yellow beneath; the chelicera are large and shining black; the abdomen has a black band at the anterior part, and posteriorly, and on the sides large bright patches of yellow; the cephalothorax, where not hid by the silky hairs, is dark green, with yellow striæ; the legs are black, with bright yellow rings at the joints, and the thighs, on the under surface, are bright yellow, and the eyes are black and shining. It forms a large, geometrical web, extended vertically between low bushes. Another remarkable insect was seen feeding on the bark of a tree, and appeared to me to resemble, more than anything else, the larva of one of the *Geometridæ,* which, being destined to live on a rough, green bark, and not among twigs and slender stems, instead of the usual brown colour, was of a bright green, with the segments of the body dilated laterally, giving it somewhat the appearance of a number of fronds of the *Lemna,* or Duck-weed, strung together. When this strange-looking caterpillar crawled, it hooped its body in the manner peculiar to the members of the *Geometridæ* family.

Near Point Romania, on the Peninsula of Malacca, among several other curiosities of nature, I observed numbers of the *Limulus Moluccanus*, or Horse-shoe Crab. It progresses in a very awkward manner, beginning its onward movement by raising its enormous cephalo-thorax, or carapace, several degrees from the ground, by extending the joints of its legs, and standing on its toes or ungual joints, which operation is, however, entirely concealed from common observation; thus reminding one of the manœuvering operations of the ancient Testudo, a sort of machine employed by the Romans in besieging cities, under the roof of which the soldiers worked when undermining the walls. When the anterior part of the shell, or carapace, is sufficiently elevated, the whole weight of the animal is thrown forwards, the shell is then again raised, and the operation repeated. It carries its spiniform tail and flattened abdomen trailing on the the ground; but when irritated, it raises the latter at an obtuse angle with the body, while the tail is elevated perpendicularly in the air, and moved from side to side in a threatening manner, When alive, the animal is of a dull, greyish, leaden colour, and dirty brown on the abdominal surface. I have sometimes been amused in putting to flight a whole army of little *Limuli,* just after their emergence from the ova. Their raised and threatening tails, angry menaces, and uncouth efforts to escape, are truly ludicrous. These young fry are frequently met with among the shallow bays of the islands in the China Sea, and I have found those of another species, (*Limulus longispina,*) at Leegeetan, on the coast of Borneo. Among the Japanese, the *Limulus* is employed to indicate the

Zodiacal constellation of Cancer; in China the *L. heterodactylus* is esteemed choice eating; and I have seen the Malays use the carapace as a drinking cup, at the springs, the long straight tail forming a capital handle.

The *Thalassina scorpionoides* is common both at Singapore and Borneo; living in vertical, cylindrical holes in the ground, in marshy places, and on the banks of rivers. During wet weather, and particularly after heavy rains, it issues from its habitaculum and comes to the surface. In its movements it is slow and feeble, and when taken, is, apparently, defenceless, not making use of its chelæ as organs of aggression. In some parts of India it is said to spoil the roads, and do considerable damage to the plantations. It is exceedingly tenacious of life, one in my possession existing upwards of an hour in proof spirits.

On our return to Sarāwak, in July, I had the pleasure of accompanying a boat expedition up the Linga, for the purpose of capturing, if possible, the noted Arab pirate, Sheriff Sahib. On our passage up this river, the scenery was very splendid, and, as in many parts, we grazed the bushes, I had excellent opportunities of gathering epiphytes, and observing the different insects that fluttered around us. The spectral-looking *Phasma*, like some withered stick, moved slowly and deliberately among the branches; while his more lively congeners, the pink-winged *Empusa*, and emerald-green *Mantis*, as closely simulated the foliage of the trees on which they hung, ever greedy for prey and rapine. It is very amusing to watch a large-sized *Mantis* saw off the head of some dipterous insect that has just become its prey: he does it in such a surgical and business-like manner!

Numerous *Grylli* and nimble-limbed *Locustæ*, of large dimensions and of splendid colours, spread their gauze-like wings, and flew, with whirring noise, from spray to spray. Hosts of merry, never-wearied *Cicadæ*, flitting about on their silvery membranous elytra, and sitting on the twigs among the leaves, raised their shrilly voices above, below, and around:—

> "Hinc querulas referunt voces, quîs nantia limo
> Corpora lympha fovet; sonitus alit aëris echo,
> Argutis et cuncta fremunt arbusta *cicadis*." *

Large *Lepidoptera*, with flapping wings, rose and sunk amid the vistas of the wood, with that lazy way these gorgeous creatures always have in tropical forests, sailing slowly across the open spaces, and gradually disappearing like lovely visions, amid the leafy labyrinths.

We came at length to the last bivouac of the fugitive Sheriff, at a point of the river where the banks were under water, and where there was an open space, bounded by enormous forest trees, whose quaint and knotted roots appeared above the swamp, in the form of brown and wrinkled twisted serpents, arches full of extraordinary contortions, and other strange forms usually assumed by the roots of the *Rhizophora Gymnorhiza* and similar trees. The pursued and persecuted remnant of the enemy had chosen this miserable spot for its last resting-place, having with native ingenuity thrown trees from root to root, several feet from the surface of the water, with cross pieces of bamboo, secured with rattans and strips of pliant bark, and on these rude and slender platforms had erected huts of branches. Here they had lighted their fires, and squatted for the night among the creatures of the swamp.

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* Virgil, Culex. l. 150.

During our ascent of this river, I had numerous opportunities of observing the habits of the Kahau, or Proboscis Monkey, in his native woods; for in the forests of this part of Borneo, he forms a very conspicuous feature, and occurs in great numbers; and although the *Semnopithecus nasicus,* or *Nasalis larvatus,* is tolerably well known, yet I am inclined to make a few observations on its history, from having had so many opportunities of examining it in a state of nature. The best account of the animal I have seen, is in an excellent work called the 'Menageries.'

In their native woods these *Semnopitheci* are not so agile as many of their quadrumanous consimilars, but climb and walk in a more deliberate manner. Their physiognomy is of a melancholy aspect, to which the prominent nasal organ lends a somewhat ludicrous expression. When excited and angry, the female resembles some tanned and peevish hag, snarling and shrewish. They progress on all fours, and sometimes while on the ground, raise themselves upright and look about them. When they sleep, they squat like the Dyaks on their hams, and bow their heads upon the breast. When disturbed, they utter a short impatient cry, between a sneeze and a scream, like that of a spoilt and passionate child; and in the selection of their food, they appear very dainty, frequently destroying a fruit, and hardly tasting it. When they emit their peculiar wheezing or hissing sound, they avert and wrinkle the nose, and open the mouth wide.

In the male, the nose is a curved tubular trunk, large, pendulous, and fleshy; but in the female, it is smaller, recurved, and not caruncular. In the latter, moreover, the organ is grooved in the middle line, and ends in a sharp point, from which it slopes abruptly to the upper lip, forming a truncate surface, in which are placed the nostrils. The eyes are small, and not much sunken; the pupil is large and circular, and the iris of a bright yellowish brown. The following description of the colours of an adult female seems to differ in some particulars from that generally given. The hair on the frontal region was of a deep chesnut colour, inclining to red; the shoulders and outer part of the upper arm red; inner part dirty white; throat breast and belly white; hair long, soft and silky; fore-arms, legs, and inner surface of thighs dirty grey, in some parts inclining to silvery; hairs on the back thick and soft, and resembling in colour the fur of an old hare; on the sides, loins, and outsides of the thighs, it inclines to rufous; over the lumbar region is a triangular grey patch, and the tail also is grey, inclining to whitish towards the tip; the naked skin of the face, when the animal is alive, is a bright red brick-dust colour, but after death, is a pale dirty pink. The palms are black. Wormb says its cry resembles "Kahau," which name it very frequently goes by. They do not, however, hold their nose when they leap, nor do they seem to be particularly gregarious.

On our return from this pirate hunt, we visited the village of Bunting, and walked about admiring the native ingenuity of the Dyak forges, the bellows of which are formed of two hollow cylinders, with feather-suckers to the pistons; observing with admiration several large and handsome War prahus, building under sheds, of great length, and having elevated and highly-ornamented prows; and more especially did we find amusement in examining the interiors of those large Caravansaries raised on poles, where the Balows live. The cabins allotted to the married couples, are garnished with furniture of a very simple and primitive description; a rude bed-place in one corner, and a few jars for holding water in another, seemed to constitute the chief essentials for the toilet and repose of the Dyak. These Balow dwellings, which may be compared to enormous bee-hives, have places under the kedjangs of the corridor, or gallery, common to the whole swarm, where might be seen fowls roosting by the dozen; various implements of war; cooking utensils; canoes unlashed, and taken to pieces; rush-woven mats; looms for weaving sarongs; huge baskets of rice and corn; and last, not least, among this singular "omnium gatherum," at all events in the estimation of the owners, numerous smoked and dusty human heads, hanging suspended from the rafters, and some of which I noticed of very recent capture. An examination of their teeth and cranial peculiarities, apprised me that one among them was the trophy of a European; several were Malayan, and by far the greater number Dyak, with their black, stained, shark-like teeth. Dalton, alluding to the propensity these people have for hoarding up the heads of their enemies, says that his friend Selgie, a Dyak chief of Coti, had as many as one hundred and fifty; and one of his sons, only twenty years of age, was possessed of nine.

As we were reposing after dinner, in our boats, a party of Balows came off in a canoe for medical advice. I was fortunate in being able to give relief in a bad case of Entropion, by removing a transverse flap of skin and muscle from the eyelid, a proceeding which seemed to give much satisfaction to the spectators; and, as usual in these cases, presents of fruits and fowls were forced upon my acceptance. Among these unfortunates was a man with that tubercular form of Lepra, called Elephantiasis:

> "corpore adeso,
> Posterius, tremulas super ulcera tetra tenentes
> Palmas, horriferis adcibat vocibus Orcum." *

Leaving the Batang Lupar on the 4th of September, we returned to Sarãwak, and shortly after, ascended the river Lundu, and visited the town or campong of Tungong, on that river, inhabited by the friendly Sibnowan Dyaks, one of the mildest and most amiable of the tribes to be found in the Sarãwak territory. Here I had the pleasure of accompanying His Excellency, Rajah Brooke, the Hon. Capt. Kepple of the Dido, and some others, in an excursion, when a party of Sibnowan Dyaks was assembled to hunt the Wild Boar in native fashion. Headed by Kalong, eldest son of Sejugah, Orang Kaya, or chief of the village, we proceeded in canoes to the hunting-ground, near the mouth of the river, accompanied by some numbers of a small, fox-like breed of dogs, very active, bold and sagacious; and after paddling for some distance, landed beneath the shade of the dark-leaved Casuarinas, and other forest trees, where the sand was marked with the foot-prints of hogs, and covered with the tracks of deer.

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* Lucretius, De Nat. Rerum. Lib. v. l. 993.

Each Dyak hunter carries a stout Nibong spear, with a well-sharpened iron head, and when the eager dogs have sniffed the game, and pressed into the tangled jungle, fierce in the ardour of pursuit, the Dyak follows up the chase, and bursts impetuously through the brushwood. Meantime, the dogs have surrounded the frightened boar, and while they are worrying and keeping him at bay, the keen-edged spear of the hunter penetrates his side, and an end is put to the moonlight foragings of the boar for ever. In this manner six or seven pigs were dispatched in the course of the day.

The Boar of Borneo (*Sus barbatus*) has, when full-grown, rather a formidable appearance. It is furnished with enormous whiskers, a huge tuft upon the nose, and a shaggy main; and it has a fierce, red eye, and a singularly elongated head and muzzle. It runs with great rapidity, is very wild and wary, and is chiefly nocturnal in its habits. It appears to be very partial to crustaceous animals, which it finds on the muddy banks of the rivers after the fall of the tide; and is frequently seen at dusk, wandering in large numbers along the flat sandy coasts, evidently bent upon the exciting errand of searching for these delicacies. Some are perfectly grey in the colour of their skins, and a large specimen, captured by one of the crew of our jolly-boat, as he was swimming across the mouth of the Morataba river, was entirely of a dirty white colour. This animal, which remained with us some days, stood very high on his legs, and had a remarkably long head. He was secured between two guns on the main deck, but always continued very savage and refractory. As we were leaving the anchorage, he broke his tether, leaped out of the port, and was most probably drowned, although we saw him strike out lustily for the shore. One of this species was killed by Lieut. (now Commander) Inglefield, at Unsang, on the east coast of Borneo, of enormous dimensions. It was a full grown boar, and weighed more than five score.

Many very interesting specimens may be procured at low water, in the flat, sandy bay near the mouth of the Lundu. It was here that we had the good fortune to discover a new species of *Amphioxus*, or Lancelet. This interesting link, between the annelides and the fishes, has been described by Mr. Gray,* who has named it *Amphioxus Belcheri*. Here also we procured a very elegant and beautiful species of Crustacea, also new to science, *Amphitrite argentata* (Adams and White);† while any person walking along the shores in the immediate neighbourhood, might have collected numbers of very perfect specimens of *Tellina Spengleri*, beautiful violet-coloured Mactras, (*Mactra violacea*,) *Solenocurtus radiatus*, and frequently a tolerably perfect specimen of *Rostellaria rectirostris*. Olives and Nassas cover the moist sand, and a brilliant dark-coloured *Rotella*, a species not yet described, may be detected lurking by thousands immediately below the surface in company with another species. Several specimens of that strange genus, *Calappa*, were taken by us in this locality.

Near the Dyak village of Samarhtan, not far from the mouth of the Lundu, there are certain mud-banks left dry at low water, and which are perfectly cribriform with the cylindric holes of *Gelasimi*, *Ocypode*, and *Gonoplax*. When their communities are no longer flooded by the water, these bustling little Crustaceans make their appearance in dense crowds, but retreat on the slightest alarm to their subterranean burrows. They are of every variety of colour, some of them being milk-white, some purple, others reddish, and many perfectly black. So numerous are these Crabs, that seen at a little distance, they give the soil a variegated aspect, nearly obscuring the original blue colour of the mud. A Crab, with a triangular carapace, of a light brown, is also common among the tufts of grass in the vicinity.

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* Ann. and Mag. Nat. Hist. vol. xix. p. 463.

† List of Specimens of Crust. in Brit. Mus. p. 126.

A few remarks on the habits of certain genera of Crustaceans, which I have noticed in the course of our wanderings, may be deemed of interest by some of my readers, although the subject will be more fully treated of in another work. The *Grapsi* are more varied in their habits than is generally supposed. The common species (*G. varius*) and others, are found running over the rocks near the sea, feeding on the *Perioptlialmi*, *Blennies*, and other fish, that quit the water for short intervals, and attacking occasionally the sessile Cirrhipeds, as *Balanus* and *Conia*, fixed on the surface, or that pedunculated one which fills up the fissures, the *Policipes*. Darwin tells us, he has seen them come to the nests of Sea-birds, and without ceremony help themselves to the fish which the parent birds had brought to feed their nestlings. They run with the greatest rapidity, and are very cunning and difficult to capture. There is one species, however, (*G. latifrons*, White) that I have found inhabiting fresh-water rivulets and ponds, which has all the quick, vivacious movements of its wary consimilars, and when hotly pursued hides under weeds and stones, remaining perfectly quiet till the enemy is supposed to be gone. The most common species on the coast of Borneo appears to be the *Grapsus plicatus,* which differs, however, in colour in a very remarkable degree, even in localities not very distant from each other.

Some of the large, powerful species of *Grapsidæ* are very bold, active, and predacious. I have seen them steal with an almost imperceptible motion, and in a cautious sidelong manner, towards a *Periophthalmus* basking on the rock, and before the fish had time to plunge into the sea, the pincer of the crab had secured it in a vice-like gripe, and the unfortunate victim was consumed at leisure. While watching the evolutions of this lively and sagacious Crustacean, I could not help comparing it to an enormous *Attus* or Jumping Spider, which, in a somewhat similar manner, creeps towards the flies on which it preys, and suddenly surprises them, by leaping on their backs, and sucking their blood.

The *Lambrus,* owing to its similarity to the gravelly floor on which it is generally found, must readily escape detection by its enemies. Its body and members, in fact, appear to be made up of a conglomerated mass of small stones. It is a curious fact that so many animals, living upon the submerged beds of broken shells and muddy gravel in the China Sea, should present a similar appearance. Such is the case with *Phoridæ, Amphitrite,* and many species of *Alcyonia.* Two new species of the genus *Lambrus* were obtained from the Java Sea, and the coast of Borneo, and have been named by Mr. White and myself *L. rapax* and *L. segnis.*

Where one of the mouths of the Sarăwak disembogues into the sea, at low water, there is a very extensive mud-flat, the entire surface of which is perforated in every part by a hitherto undescribed species of *Gebia,* which hides in a perpendicular position, in a superficial burrow, with the extremities of the chelæ at the orifice for the purpose of securing whatever prey may offer. Thousands of *Macrophthalmi* and other crabs live in the same spot, with a small species of *Lingula;* while upon the slimy surface, crawl thousands of little brown *Cylichnæ,* several *Mangeliæ,* and *Columbellæ.*

The *Spheromas* are generally obtained in company with *Cymodoceæ, Cassidinæ, Amphoroideæ* and others, among dense masses of floating Sea-weed, where they appear to live an active predatory life among the populous mazes of their small, floating forest. They are constantly spinning and darting about, rolling up their bodies into a ball, then straightening them, and crawling among the Algæ and Keratophytes, with a great deal of vivacity. Among the collection brought home in the Samarang, are several species not before known to Crustaceologists.

The very handsome genus *Sicyonia* of Edwards, swims in a slow and deliberate manner forwards, and occasionally with a sudden jerk propels itself vigorously, in a backward direction. It keeps at a considerable distance from the shore, and appears to love deep, still water, never appearing when the sea is at all ruffled. The species obtained by us is new, and is deposited, with the other Crustaceans, in the British Museum.

Like the genera *Thenus* and *Ibacus,* the *Scyllarus* lives at some distance from the shore, and in tolerably deep water. It swims in the manner of a *Crangon*, by rapid inflections of the abdomen. It will occasionally spring through the water with the greatest velocity, in a backward direction, and when caught wounds the hands with the tail, which it throws about with violent jerks.

Among numbers of new and interesting genera of Crustaceous animals found by us in the province of Unsang, Borneo, was a new species of *Alope* (White), a remarkable shrimp-like animal, with one foot-claw rudimental, and the other enormously developed. It is an active and restless little creature, darting and whirling forwards and backwards, and frequently producing a loud clicking noise by snapping the pincer at the end of the large foot-claw, in the manner of the *Callianassa* and *Squilla*. Specimens may be found under nearly every stone which is turned on the beach at low-water mark, and the loud noise it makes, when discovered, would astonish persons ignorant of the cause of its production.

The *Gonodactyli* appear to differ from *Squillæ* in their habits, inasmuch as they are generally found in deeper water, whereas the *Squillæ* affect the shallow, weedy, and sandy bottoms, within coral reefs, and on flat beaches, where they hide in holes of the banks of pools, across which they dart occasionally in straight lines, leaving a turbid track behind them. They both, however, have the same power of producing a loud clicking noise with their chelæ, and of inflicting very severe wounds with those organs, using them in a scythe-like manner, like the *Mantis*.

The *Cryptopodia dorsalis* (Adams and White) is found on a stony bottom, in deep water. It has the habits of

Calappa, feigning death, and concealing the legs under the edge of the carapace, and folding the chelæ upon themselves to protect the eyes and mouth.

The *Trapeziæ* are tolerably lively in their habits, with the same manner of hiding, and shuffling under stones, as the *Porcellanæ*; but unlike them, they inhabit the coral branches of deep sunken reefs.

Many species of *Idotea* and *Iara* would appear to inhabit the Sea-weed along the shores, as well as that found floating in the high seas. At Quelpart, I found a large and singular species, not yet described, in the former situation; and in the sea of Celebes, I met with another new form among Algæ far from land.

The species of the genus *Lupocyclus* (Adams and White) are very active in the water, and keep rather close in shore. They swim by quick, rapid jerks along the bottom, and when caught, pinch rather severely, and wound the fingers with the spines of their chelæ. Their habits, indeed, are very similar to those of *Lupa, Neptunus,* and other swimming crabs.

The *Chorinus acanthonotus* (Adams and White) inhabits, like the *Mithrax,* deep water, and prefers those localities where the bottom is covered with weeds; it is inactive in its movements, and becomes rigid in all its limbs when first captured.

CHAPTER VII.

BORNEO.

Ambong—The Badjows—The Illanons—Appearance of the Country—Wild Men in the Mountains—*Tampassook*—Scenery—The haunts of Pirates—New species of Lantern-Fly—Lantern-Flies not luminous—A beautiful Flata—Gigantic Tent-Caterpillar—Habits of certain Ants—The dwellings of the White Ants—Habits of Scarabi and other Mollusks—*Brunai*—The Upas-Tree—The Pantai—Scenery of the River—A deserted Village—The Rajah's grave—Bats and other Animals—*Bulungan*—The Orang Sagai—Wild and cultivated Plants—Terrestrial Leeches—The Nibong Palm—Vegetable Tallow—Aromatic Barks—Plants used for benumbing Fish—Singular mode of fishing—Insects—*Leegeetan*—Scenery—Poisonous Plants—Insects—Birds—Habits of Crustaceans.

On the 25th of September, the Samarang was again at Singapore, leaving which we arrived at Borneo on the 13th of October, touched at the Island of Labuan on the 22nd, and on the 3rd of November, the ship was towed into the snug little bay of Ambong, our business being to rescue, if possible, an English lady, said to be detained prisoner at this place. The village is miserably poor and dirty, with about fifty houses, and a few squallid, leprous Badjows, or Sea Gypsies, for inhabitants. So badly off for comforts were these poor people that they willingly gave us a bullock for a piece of calico, and a fowl for an empty wine-bottle. They told a pitiful, and no doubt perfectly true, story about a famous Illañon pirate-chief, having come from the neighbouring Tampassook, and taken away the young men of the village, leaving those that remained nearly destitute. The adjoining country is beautiful, exhibiting in its sea-ward aspect more especially, gently undulating hills, covered with a long, rank, green-looking grass, in many parts higher than a man's head; little rivulets trickle down the sides, and form refreshing springs under the shade of the trees that overhang the beaches of little coves and bays. The mountains in the vicinity are inhabited by a wild and savage race of Dyaks, possessed, by all accounts, of a much larger stock of energy than the poverty-stricken gypsies of the village. The bay abounded with fish of the most beautiful colours and striking forms, keeping my pencil pretty well employed.

On the 10th of November we touched at Tampassook, a lovely, fertile plain, with a river running through it, from its source in the huge mountain of Kini Balu, which towers above the plain, and forms a most imposing back-ground. The towns about here, and on the river's banks, are stated to swarm with Illañon pirates, a brave and bold set of buccaneers, who keep the entire coasts of Borneo and other islands in a constant state of alarm. Those we saw were fierce, proud, and well-made men, handsomely clothed, and fully armed.

Among several other splendid insects captured by me in the course of this short cruise, I may mention a large and handsome new species of Lantern-Fly, which I have named *Fulgora (Hotinus) Sultana.*[*] The form of the beak, or rostrum, is intermediate between that of *H. clavatus* and *H. pyrorhynchus*, and like the upper surface of the thorax, is of a rich blood-red colour; the elytra are blackish, brown at the base, with the tip ochraceous, and traversed by numerous veins of the same colour; the wings are of a deep carmine, fading to pink towards the anal angle, the tips being brown, with four or five roundish white spots. The body above is straw-coloured, and, when the insect was alive, was covered with a white mealy substance, which I have noticed on many other insects in the tropics. This showy-looking addition to our known Lantern-Flies remains in a torpid state during the day, and becomes more active in the evening; in this respect being analogous to its consimilar genera *Aphenia, Flata, Pœciloptera,* and *Euriptera,* which generally select the early part of the night for their flittings. None of these insects, according to my observation, are luminous in the slightest degree; I have kept the *Hotinus Sultana,* and the common Chinese species, for many days, but have never seen the vestige of any luminous property, either about their so-called lanterns, or elsewhere. Madame Merian has stated, however, that the Surinam species is luminous.

I have figured a very lovely unpublished species of *Flata,* which I procured in the jungle immediately behind the village of Ambong, the elytra of which are of a light semi-transparent sepia, with a darker brown circle and a broad diagonal white linear mark, and yellowish tips; the wings are of a light, silvery, semi-opaque white, the head is fawn-coloured; the eyes and the antennæ are black; the thighs pale-yellow, and the legs and tarsi black. This truly elegant species flies by night in a weak and fluttering manner, and with a peculiar oscillatory movement of the wings; by day it is sluggish, and reposes on the surface of leaves. Near Ambong an *Oiketicus* is found feeding on the trees with a case an inch and a half long, composed of dead and withered leaves, forming externally a compact and hollow cylinder, closed at the posterior end, and lined with a well-woven, downy felt, of a dirty brown-colour, fabricated from a finely-comminuted, vegetable substance. The larva is tolerably active and very voracious, and the imago is a large, dull-brown moth. Among the high grass, I noticed the active black-and-yellow *Gryllus elegans* (Guér) and, alighting on the leaves in sunny spots of the forests, may be seen the *Phytomia chrysorrhœa* (Guér) of a beautiful metallic-blue, with a golden tail, and the large carnivorous *Milesia gigas.*

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[*] Ann. and Mag. Nat. Hist. vol. xx. p. 204.

During a ramble into the jungle, I was very much amused by observing the great variety of Ants that abound in these forests of Borneo. An Ant, usually more solitary than its neighbours, which I have named the "Bombardier," has a mode of defence similar to that of *Brachinus crepitans.* When irritated, it turns up the caudal segments of the body in the manner of an angry *Staphylinus*, and forthwith emits a continuous stream of dense, white, acrid vapour. This Ant is nearly half an inch long, with a large head and enormous mandibles. It is of a shiny black colour, and has no sting.

There is another ingenious species which constructs its domicile out of a large leaf, bending the two halves by the weight of united millions, till the opposite margins meet at the under surface of the midrib, where they are secured by a gummy matter. The stores and larvæ are conveyed into this arboreal home by regular beaten tracks, along the trunk and branches of the tree.

On the banks of the Linga, the trees are covered with black-coloured nests built by an insect of a red colour and of large size. These aërial habitacula are formed of prepared vegetable matter, mixed with a tenacious secretion, and peopled with inhabitants furnished with a most tormenting sting.

In many parts of Borneo, there is a shining black Ant about the sixth of an inch long, whose habits are altogether nocturnal. During the day, it remains concealed within its subterranean galleries; but as the night advances, it covers the ground in moist and sheltered places with its myriad hordes. Its sting is very severe, though the pain and irritation soon pass away.

The habitations of those ingenious little architects, the *Termites*, or white Ants, have been often mentioned by travellers. One species occurring among these islands builds its city of finely-comminuted leaves and mud, forming a huge hemispherical nest on the trunks of trees. The interior consists of myriads of *cancelli*, separated by walls and passages, which are all thronged by the tiny soft-bodied inhabitants. On being disturbed, the big-headed soldiers make absurd and impotent attempts to defend their Queen and helpless workers, who immediately retire within the recesses of the city. Seen from a little distance, this arboreal insect-metropolis looks like an enormous vegetable excrescence, or wen growing from the bole of the tree. There are, moreover, covered galleries from the ground, made of mud, leading to the city gates.

Cuvier says the *Scarabi* feed on aquatic plants, but I have never observed them among the Algæ that lie along the shore; but in the dark, damp woods, more particularly along the sea-coasts, they are very numerous. They love a humid soil, and crawl languidly like the snail. They are fond of congregating together under stones and tree-roots, or in holes of the ground. They feed on partially decayed leaves, and lay their eggs under damp rotten logs, and the young shells may be found concealed, in large numbers, in the crevices of dead trunks. The *Scarabi* assume various shades of colour, from a mottled reddish brown to pale yellow, and I have even seen them white.

The species of *Conovulus,* which lives entirely in the salt water, has a shell of a much firmer character than that which is found amphibious, among the mangrove swamps. In fact, it generally follows, that shells, which inhabit both the land and the water, are intermediate in density of structure between marine and terrestrial species, and are covered in general with an epidermis. Thus we find *Telescopium, Potomis,* and *Terebralia,* covered with a kind of epidermis, and their calcareous dwellings less solid than their marine analogues, the *Cerithia.* In like manner, I have found a shell in the rivers of Celebes, named *Melatoma,* by Swainson, which bears the same relation to *Pleurotoma.* The *Potamomya* is a thinner shell than *Corbula,* which it represents, and *Neritina* than *Nerita.* I have found a species of *Pholas* in the fresh-water rivers of Borneo, living in dead trunks of trees, which is partially covered with a thick brown epidermis.

It is a curious fact that the nearer mollusks live to the sea-water, the more dense their shells generally become. This may be noticed in those species of *Auricula* and *Melampus,* found among the loose stones on beaches; and among the Korean Islands, I have found a *Cyclostoma,* in heaps of stones, near the sea, of a very compact appearance, compared with the terrestrial species. The *Cyclotrema* and *Scalaria,* their marine analogues, are yet more calcareous and dense in their structure. Among the Philippines, I have observed some auriculariform *Mitræ* crawling about the stones, which the receding tide had left exposed, in the manner of the *Quoyiæ* and certain species of *Planaxis.* These *Mitræ* have an epidermis, and are hardly of so dense a nature as other members of the family. The exception to the foregoing rule is to be found in those pelagic animals, in which the extreme lightness of the shell constitutes their best security; for the ocean may toss them in its fury, but, unless a foreign body interpose, their tenuity saves them from being injured.

While residing at Brunai, I had an opportunity of examining the celebrated Upas-tree which grows on the banks of the river opposite the city, and a short account of it is given in the body of the work; a few notes which I shall here add, may not, however, be deemed altogether void of interest.

Mr. Crawfurd observes* that the word *upas* "is not a specific term, but the common name for poison of any description whatever." He says that *Antiaris toxicaria*, although the common source of the vegetable poison in use, does not yield so intense a poison as the *Chetik*, a large creeping plant found only in Java. This is the same plant *Strychnos Tieute*, "Tshettik" or "Tjettik," I have alluded to in my notice of the Upas-tree, as the *Upas-Radja* of the Japanese. The symptoms produced by the Strychnos poison are nervous, while those produced by the juice of the Antiaris act chiefly on the vascular system. The violent effects of the latter are certainly very much exaggerated, and from what I have noticed myself and gathered from hearsay, I am inclined to agree with Mr. Crawfurd, who observes very truly that "it proves hurtful to no plant around it, and creepers and parasitical plants are found winding in abundance about it;" and in another place "beneath the shade of it the husbandman may repose himself with as much security as under that of cocoa-palm or bamboo." The supposed remedy which Rumphius mentions under the names of Bakung and Radix-toxicaria is the *Crinum asiaticum* of Roxborough,† the bulbs of which act beneficially by inducing violent vomiting.

Mr. Brooke, in his journal, makes the following observation on this famous poison-tree, and the plants sometimes confounded with it:—"On the authority of Sulerman, an intelligent Meri man, I am told that the tree below the town is the real upas, called by the Meri men *tajim*.

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*Hist. Ind. Arch. vol. i. p. 467

† Flor. Ind. Vol. 2. p. 128.

The Borneons call it *upas*. Bina (the name we formerly got from a Borneon for upas) is by Sulerman's statement a thin creeper, the root or stem of which, being steeped in water, is added to the upas to increase the poisonous quality: it is not, however, poisonous itself. There is another creeper, likewise called *bina*, the leaves of which are steeped and mixed with the upas, instead of a stem of the first sort." With this interesting statement, we dismiss the Upas, by admitting in the words of Crawfurd that, "Every thing we know of the true history of the *Upas* tree proclaims the egregious mendacity of the man who promulgated the fable respecting it, which has obtained currency in Europe, and the extraordinary credulity of those who listened to his extravagant fiction."*

On the 27th of November, we left Manila, for the purpose of rescuing from the hands of the Sultans of Bulungan and Gunung Taboor, the crew of the 'Premier,' a merchant ship which had been wrecked on a shoal near Pulo Panjang, on the coast of Borneo, first touching at Sooloo for the purpose of procuring a pilot. On our passage to the Pantai river we perceived the remains of the ill-fated vessel. As we ascended the river, the scenery was observed to be very wild and romantic, conveying a striking view of the vast extent of vegetation which exists in every part of this island. Meeting with no traces of habitations, however, in this long branch of the river, we returned to the ship, and on the following day proceeded to explore the other branch, which, as we ascended it, expanded in one part of its course into a large, wide, navigable river, with numerous islets dotting its surface, and having the banks clothed with the most superb timber-trees, and the most beautiful and luxuriant vegetation imaginable.

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*Hist. Ind. Arch. vol. i. page 471.

In the course of our progress up the river, we came to a deserted village, and while the captain was observing, I joined an exploring expedition, and examined the country around. Our attention being directed to a building on a hill surmounting the ruined hamlet, we scaled the height, and found it to consist of the tomb of a Rajah or other great man. It was neatly palisadoed round, and covered with a kedjang roof, while, in the interior, over the grave, was a faded canopy of silk. In the course of our scrutiny a large and handsome Snake was espied among the rafters, and an animated hunt ensued, which ended, however, in the escape of the serpent. In our eagerness to obtain the specimen, the shed was unroofed, and, as I was anxious to ascertain the mode of sepulture among the Malays, I got permission from the captain to dis-inter the Rajah, and examine the grave. Some men being placed at my disposal, we proceeded in our unholy work, and, at about four feet from the surface, came to a board placed in a diagonal manner across the shaft, on carefully removing which we perceived a square lateral chamber, or cavity, where the mortal remains of the deceased "Orang Kaya" were reposing. The skeleton was that of a very old man, and is now in the Museum of the College of Surgeons. Not a vestige of clothing, not even the wrapper of white cloth which is said to be generally employed, nor any arms, amulets, or ornaments of any kind were found in the grave. The body was laid upon the right side, with the knees in a bent position; and the flesh was mummified and adhering firmly to the bone; the ligament connecting the hyoid bone to the styloid process, and also the thyroid and cricoid cartilages were completely ossified; the hair was thin, and the alveolar processes of the jaws absorbed, thus proving the extreme old age of the exhumed.

I was very much astonished at the great numbers of bats which were here concealed in the heads of the Banana trees, and which flew forth, when disturbed, on feeble, fluttering wings, many among them having a couple of little ones clinging tenaciously to the pectoral mammæ of their mothers. The swampy ground in the neighbourhood abounded in *Assimineæ*, small univalve Mollusks, and was covered in many places by the foot-prints of deer and wild hogs. On raising a tablet suspended to an old tombstone, to endeavour to decipher the inscription, I made captive an enormous black scorpion, which had there taken up his quarters.

Upon passing the first portion of Bulungan, we were desired to proceed no further, or the Sultan would fire upon us. Disregarding these admonitory warnings, however, the boats continued their rapid progress up the river, and finally came to an anchor immediately opposite the palace of the Sultan Before this edifice was an open space, planted with numerous pieces of cannon, some of large calibre, but old, and badly mounted; these were manned by crowds of brown-skinned warriors, while hundreds of excited armed men thronged the banks in readiness to throw the spear and blow the deadly sumpit. After an attempt to intimidate us by a pretence to fire, they thought it advisable to establish a friendly understanding with their visitors. Accordingly, an old Arab, the Sultan's vizier, or prime minister, came off and civilly enquired our pleasure. On being informed of the nature of our errand, he returned to apprize his Highness, and to prepare a rough salute in honour of the British flag, which latter was performed in a respectable manner, and returned by us in somewhat better style; in short, in such a way as to constrain the natives to behave very civilly while we remained before the city. The officers accompanied the Captain upon a visit to the Sultan, in state, who consented to deliver up the Lascars then in his possession, without demanding ransom. As many of these unfortunates were distributed throughout the country, some at a considerable distance from Bulungan, we were necessitated to wait in the river more than a week before the entire number could be collected, which afforded us an opportunity of seeing something of the neighbourhood. In the town I noticed the *Phœnix farinifera* and in the jungle around *Caryota urens*, *Borassus caudata*, *Bambos verticillata*, *Pandanus lævis*, a species of *Calamus*, and various plants altogether new to me; offering a rich harvest for an enterprising collector, and a rare intellectual treat to the Botanist.

During our stay at Bulungan, we had numerous opportunities of observing the "Orang Saghai," or wild men of Borneo, who came from the mountains in great numbers, probably to offer their services to the Malays, in case of any warlike operations ensuing with the English. On our proceeding up the river, long before the town came into view, isolated canoes betrayed its vicinity. As we drew nearer, however, the boats became very numerous, some containing hunting and fishing parties, and others fully equipped for war. Among the most striking of these latter, were several long and narrow canoes, manned entirely by Dyaks, arrayed in all their savage finery of plumes and skins and beads and other uncouth ornaments, armed invariably with the blowpipe or sumpitan, and carrying quivers of sumpits, or small upas-poisoned arrows, a long light spear, a shield of wood, and their constant companion, the sharp-edged parang; being thus prepared, as they thought, either for attack or defence. Displaying in their manner neither the guile nor caution of the treacherous and wily Malay, these untutored denizens of the interior showed an evident and lively curiosity about our visit, striving to approach the boats and engage in conversation with the white man. As they propel their narrow canoes rapidly along the river, they always stand upright, using the paddle with a peculiar jerking motion of the body. Many among them, particularly those holding the rank of chieftains, were very gaily and fantastically ornamented. In the feather caps, worn by some, the long tail-feathers of the Argus pheasant appeared to be a favourite ornament. In the rude and showy head-dresses of several were toupees of the tail-feathers of cocks and other birds, giving these Orang Saghai very much the appearance of a party of North American Indians, dressed for the war-path. Many of their caps were made of monkey, lynx, and tiger skins, and adorned with the beak of the large Hornbill (*Buceros Rhinoceros.*) Some of the men were regularly tattooed being ornamented, more particularly on the fore-arm and instep, with various figures, frequently very graceful in their design, and very neatly executed.* The ears of the great majority were wonderfully metamorphosed, and greatly disfigured, by the insertion of tigers' teeth in a hole of the summit of the pinna, and of rings, sometimes single and sometimes as many as four or five, composed of tin and very massive, appended to the lobe, forming cumbrous ear-rings. These enormous metallic pendants, being very heavy, greatly distended the aperture in the lobe, which frequently descended as low as the shoulder. They dress variously in the skins of animals, or in jackets made of the bark of trees; some, however, were entirely naked, with the exception of a waist-band and perineal appendage. When the jacket or body-garment consists of a lynx or tiger's skin, the hind-paws and tail, or fore-paws and head, hang down behind, which gives the wearer a very wild and picturesque appearance.

A chief, named Meta, was very anxious that we should visit him in his home among the hills. He seemed to take a very particular liking to the English, and was our constant visitor. On one occasion a follower of his was detected in the act of abstracting a piece of white calico, when he was immediately seized, and severely chastised by the indignant chief. The captain forwarded a letter by this savage to Mr. Brooke, at Sarãwak, Meta assuring him that it would arrive at Brunai perfectly safe, as he would transmit it across the country from tribe to tribe, carefully avoiding those who were his enemies. The same chief blew for our satisfaction some sumpits across the river; the effort appeared to be very great, but the direction of the dart was straight, and its force considerable. Before using the sumpits, they tip them with fresh poison, and steep them in a small vessel of lime-juice, which increases its virulence and activity. Their helmets, or head-pieces, which are made of strong skin and bamboo, are said to be sumpit-proof; so are also the corselets which cover their breast and back, so that only the arms and legs are left exposed. Many have a large polished pearl-shell appended in front, probably to protect the belly and navel. Their shields are of hard wood, variously painted and ornamented with shells and tufts of human hair. Some of these shields are upwards of four and five feet long, and two broad.

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* Mr. Earl says, that he has seen tattooed Dayaks, and that the Polynesian custom of tattooing the skin prevails among the Dayak tribes in the interior of Borneo.—PRICHARD'S *Phys. Hist. of Mankind*, vol. v, p. 91.

These men are much better featured than the Malays, having straighter and more prominent noses and higher foreheads. They wear their hair long and straight, but cut short across the forehead. It is coarse and black, and often confined by a white cincture, especially among the women and boys. Cutaneous diseases appeared common among them, particularly a rough, scurfy kind of lepra, which, however, they are said to produce artificially, and consider ornamental.* The women in this part of the island do not appear to wear the ring-stays of stained bamboo peculiar to some tribes, as the hill Dyaks of Serambo and others, but have simply a sarong, which extends from below the breasts to about half way down the thigh. Like the men, they disfigure themselves by wearing enormous weighty ornaments of wood, ivory, or tin in the lobes of their ears. In their persons they are usually engaging and well made, stately and voluptuous in their gait and manner, though somewhat too *en bon point* to please the fastidious eye of an Englishman. They are reported by the Malays to be very modest, chaste, and constant to their husbands. Their chief employment here, as elsewhere in Borneo, is pounding and preparing the *padi* for the sustenance of their lords and families. In all the Dyak tribes, the members are usually divided into those who make war, privileged men, the flower of the tribe; those who manufacture arms; and those who cultivate the ground and make ornaments for the women. By means of the Saghai a profitable trade is carried on with certain Bugis Makassars, who come in large well-armed prahus from Celebes. Their traffic consists chiefly of bees-wax and camphor, honey, vegetable-tallow, and areca-nuts; trepang, damma or damer, (the concrete juice of *Shorea robusta*,) sharks'-fins, tortoise-shell, edible birds'-nests, and pearls: the specimens of the latter which I saw, although in some instances of large size, were very indifferent in form and colour.

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* Mr. Earle observes, that the word 'Dayak' is often used by the Malays to designate a cutaneous disease to which the aborigines of Borneo are very liable, more so than any of the other Polynesian tribes whom I have encountered. I am of opinion that this is the origin of the term Dayak, as applied to the aborigines of Borneo.—PRICHARD'S *Phys. Hist. of Mankind*, vol. v. p. 89.

Though differing in some respects from the rude and savage Scythians who had their flocks and herds, the Dyaks yet exhibit a pastoral wandering life, mingled with warlike habits and sanguinary customs, resembling those of that ancient people. Like the North American

Indians, they also congregate in tribes, and only obey chiefs elected from the wisest and bravest of their horde. Although in a measure addicted to the chase, they yet cultivate the soil, and live upon the produce of the earth. Like the Indians of the West, they are fond of decorating themselves with feathers and trophies, and if they do not scalp their enemies, they deprive them of their heads. Amongst themselves they are quiet and gentle, but in war their passions are frightful, fierce, and vengeful.

The females are better treated than is generally the case in savage tribes; they grind the *padi* and fabricate the clothing; nor does the whole burden of tilling the ground devolve entirely on the weaker sex, as is the case in some countries not yet civilised. In the terrible excitement of war, the fierce yells of the Dyaks, like the whoops of the Red-Man, are demoniac. Instead of the quiver and bow, the tomahawk and scalping-knife, the Dyak arms himself with sumpitan and sumpits, spear, and parang. They attack their enemy in the dead of night, without even the fair warning of the red-tomahawk of the American Indian, and with equally as much guile and remorseless compunction. It is a somewhat remarkable fact, that many among the Dyaks fancy heaven is situated at the top of Kini-Balu, and that the pass is defended by a savage dog. The North American Indians likewise imagine their land of souls to be guarded by a furious dog. It is singular that the Greeks of old should have entertained a similar notion, the warder, old Cerberus, at the gates of Hades, being represented as a three-headed dog. The Dyaks believe in one God, whom they, like the Red-Man, regard as the creating and preserving

Spirit of the universe; and they both have in common, moreover, a belief in omens, and hold certain birds in veneration. With regard to the barbarous custom of cutting off heads, we are told that the aboriginal inhabitants of New Guinea, the Horraforas, have precisely the same practice. Dr. Coulter, an American gentleman, in an account of his adventures among those people, observes, that they have "a horrible custom I believe peculiar to themselves: a young man, before he can possess his bride, must present her with a human head, which must not be mutilated, but on careful examination of it by her family, bear the true marks and ornaments of one of an enemy."

Dr. Dalton, in his "Essay on the Dyaks," speaks of some wild men that inhabit the north of Borneo, who neither cultivate the ground nor live in huts, but roam about in a perfect state of nature; who do not associate, save when the sexes meet in the forest. When their children are old enough to shift for themselves, they quit their parents and pursue a similar savage and independent life. They sleep under the overhanging branches of the trees, make a fire to keep off the wild beasts and snakes, cover themselves with a piece of bark, and are hunted by the other Dyaks, who regard them with the utmost contempt. These *nobler* Savages "shoot the children in the trees with the sumpit, the same as monkeys from which they are not easily to be distinguished." Dr. Leyden also observes that "the lofty mountains ranged on the centre of Borneo are represented as occupied by a people named Punams in the very rudest state of savage life."

As you approach a Dyak Village, the splendour of tropical vegetation cannot fail to impress the visitor. The magnificent Maize (*Zea mays*) springs up often in large and vivid patches; the Bird's-eye Pepper and Turmeric are found growing like common weeds. The *Piper Betle*,* the leaf of which is chewed with ripe or green pieces of the nut of *Areca oleracea*, is a graceful, pretty looking plant, particularly when loaded with long spikes of fruit. Some individuals appear however, never to have fruit, and are probably barren or males. The *Piper Betle* either runs like a creeper along the ground, or clings to the trunks of trees in its vicinity. Sometimes you will see it climbing up poles or the stems of the Papyia and Areca palms in little patches which are carefully guarded by rude palisades, and great pains taken by attention to irrigation, &c. to insure a good flavour in the leaves. Crawfurd says that "in the northern parts of Hindostan it is grown almost with as much difficulty as the plants of warm regions in *our* hot-houses." It is a curious circumstance that the use of the *Sirih* leaf diminishes perspiration, while that of the Ava (*Piper methysticum*) is used among the Society Islands to produce excessive diaphoresis for the cure of disease. The Durion (*Durio Zibethinus*) and Mangustan (*Garcinia Mangostana*) will be seen in some campongs amid whole groves of broad-leaved Plantains (*Musa paradisiaca*), graceful Cocoa-nuts (*Cocos nucifera*), elegant Palmyras (*Borassus*

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* So written by Linnæus (Sp, Plant 40.) Mr. Crawfurd has Piper Betel, although he observes (Ind. Arch. p. 403) that "the word adopted in the European languages is from the Telinga, in which it is indifferently pronounced Betlé or Betré."

flabelliformis), and the slender tapering Betel-nut palm (*Areca oleracea*); while the showy-looking Papaw (*Carica Papaya*), and here and there a Rhambutan tree (*Nephelium Cappaceum*), or a dark-leaved Guava (*Psidium pyriferum*) will contrast with the golden fruit of the "Limau gadàng," or Shaddock. The Bamboo (*Arundo Bambos*) forms extensive groves at the back of many of the houses, and the Pine-apple (*Bromelia ananas*) luxuriates in the dark damp shady nooks. If you leave the neighbourhood of man, and take a stroll towards the river's bank, you may see the showy *Pontederia* brightening the fluviatile swamps with its azure blossoms. Close to the water's edge the "Paku Grudu" (*Cycas circinalis*) frequently grows luxuriantly, and a gigantic kind of Burr-weed (*Sparganium*), whose yellow, compound flowers, form quite a gay relief to the universal green that encloses them on every side, and whose singular fruits are sure to arrest the attention of the traveller. At Bulungan, the forest on the banks of the river, was full of leeches and *Planariæ*, some of them very handsomely marked. The Leeches crawl upon the leaves and fasten to the skin as you brush by the branches, but the *Planariæ* live upon the ground and are found sticking to the dead damp leaves.

The Nibong Palm (*Areca Tigillaria*, Jack) so often alluded to in the course of the work as one of the principal trees which furnish posts, rafters, and floorings of the houses in Borneo, perhaps demands here a brief notice. The tree is surrounded at each girdle of growth by a cincture of sharp thorns, which are more numerous and needle-shaped as we approach the leaves; the head contains, like all other Palms, a soft spike about the hardness of the core of the cabbage, which has hence induced seamen and others to christen it the Cabbage-Palm, and the Spaniards "*Palma brava.*" It is certainly a most delicious vegetable, and when boiled resembles Asparagus or Kale; uncooked in its raw state, it furnishes fictitious cucumber and an excellent salad. The tree contains an immense quantity of useless pithy matter or newly-formed wood of the interior, and it is therefore split into four or more parts, and the soft parts cut away leaving only the outer rind of older wood, which is of so flinty a nature as to turn the edge of well-tempered tools. These narrow slightly-curved slabs form the principal flooring of all Malay houses. In England this hard, brittle, and beautiful wood is frequently used for the sticks of umbrellas; and it is capable of being manufactured into very elegant frames for pictures, or for any matters not requiring a greater breadth than twenty-two inches by half an inch, or three-quarters of an inch in thickness. The bows as well as arrows of the Natives of New Guinea are generally formed from this wood.

At Gunung Taboor, I first saw that singular commodity collected by the Dyaks called vegetable-tallow, which is an object of some commercial importance among the Natives of the Indian Archipelago. It is a concrete oil obtained from the expressed boiled fruit of a species of *Bassia,* a Sapotaceous plant, either the *B. longifolia* of Linnæus or the *B. butyracea* of Roxburgh, and belonging to the same genus as the Butter-tree described by Mungo Park. It was brought to us in large round flattened cakes of the consistence and colour of cheese, and also in cylindrical masses, which had assumed the form of the bamboo joints into which it had been poured when in a liquid state. A plant which grows in Java, the *Tetranthera Roxburghii* Nees, also has a fruit which yields a kind of naturally-formed vegetable-tallow, out of which the Chinese manufacture the candles with which ships are sometimes supplied at Singapore and Hong-Kong. To render these miserable apologies for candles more stable, they cover them over with a thin coating of wax. The principal advantage of the vegetable-tallow of Borneo over that produced from animal fat is, that it remains concrete under a tropical heat, whereas the other becomes too soft to serve any useful purpose.

The Natives likewise collect aromatic barks of which we obtained samples. One specimen appeared to have been obtained from the *Cinnamomum Sintoc,* as it differs from the bark of *C. Culilawan,* in having a flavour likewise of cloves. The specific name of the latter plant which yields the clove-bark of commerce, is derived from Kulit-lawan, the native name of the bark; the specific name of the former is probably taken from the Javanese name for the same bark "Sendok." The bark generally called cinnamon in Borneo, is from a species of Cassia; the true Cinnamon-tree (*C. zeylanicum*), although grown in Java, is a native of Ceylon.

One of the most remarkable botanical productions of Borneo is the *Tephrosia toxicaria,* common at Kuching and Serambo, the roots of which are used by the Malays for the purpose of stupifying the fish of the rivers, and which, by acting on the nervous system, causes them to be more readily speared by the natives. This root might serve as an excellent substitute for Digitalis.

The *Phyllanthus virosus* is used in some parts of India for the purpose of intoxicating fish, and in Jamaica they employ the root of the *Pisidia Erythrina* for the same purpose. At Sooloo, and in other parts, they select the fruits of the *Borassus Gomutus;* in the West Indies, the berries of *Sapindus saponaria,* pounded and thrown into water, are used with a similar intention; and in Mindanao the *Barringtonia speciosa* answers the same end. Marsden, in his history of Sumatra, observes, that the natives "steep the root of a certain climbing plant called Tuba, of strong narcotic properties, in the water where the fish are seen, which produces such an effect that they become intoxicated, and to appearance dead, float on the surface of the water, and are taken with the hand." The Dyaks are very dextrous in spearing the poor stupified fish which are under the influence of the weed. There is another very singular mode of capturing the finny tribes in Borneo. Floating ducks, made of light wood, have a hook, properly baited, fastened to a line which hangs from the under surface. A man in a small canoe looks after the ducks at a distance, and when he sees one begin to dive and plunge, he paddles up and secures the fish. I have seen dozens of these dumb ducks floating down the rivers with the stream. Sir George Staunton says, that a somewhat similar mode of fishing is practised in China; and La Pérouse, speaking of the Esquimaux, observes, that "their mode of angling is very ingenious. Each line is fastened to a seal's bladder, and set adrift. One canoe has twelve or fifteen of them. When a fish is caught, the canoe rows after it." Dixon, in his Voyage, makes a similar remark regarding these people. He says, "they bait their hook with a kind of fish called by the sailors ‘squids,’ and having sunk it to the bottom, they fix a bladder to the end of the line, as a buoy.”

Crawling on the leaves in the jungle was a very beautiful insect, the larva of a species of *Tesseratoma*, entirely of a delicate, semi-transparent, blood-red colour, with a flattened body, and head furnished with a stinging proboscis, which inflicts a somewhat painful wound. At Gunung Taboor, I procured one of the loveliest species of *Cassida* I have seen in any collection. The dark-green, convex body was studded with round, brilliant, golden spots, while the margin was transparent horn color, and reticulated like a leaf. Among other rare and beautiful insects, the *Lucanus Tarandus* of Thunberg flew at dusk into the boat in which I was sleeping. It is a large stag-beetle, with elongated jaws and bronze elytra, shaded with gold and red, and covered all over with a velvety down. A singular coal-black *Coreus* was also met with, covered with golden hairs.

Returning with our liberated captives from Bulungan, after having examined the reef on which the “Premier” was wrecked, and where we obtained some interesting crustaceous and molluscous animals, we touched at Leegeetan, on the coast of Borneo, for the purpose of watering the ship, at which place I procured many rare insects, and had a good opportunity of seeing some of the wildest woodland scenery in Borneo. In the course of a little trip at this port, I fell in with a scene so singular, that I will endeavour to describe it.

On our right was a vast, sandy flat left by the retiring tide, where several stout-limbed oyster-catchers were screaming and running rapidly along, like small ostriches, while beyond was the ocean, hushed into a perfect calm. On our left extended the huge forest trees, for miles fringing "the beached margent of the sea." Entering a thicket, we threaded the woody maze a little distance, and came suddenly upon a large mangrove swamp, where all the trees had, from some cause unknown to us, perished, and remained, some erect like huge, blackened skeletons arising from an oozy bed; and others prostrate, and lying in vast heaps, forming fit hiding places for the huge Monitors and broad-bellied Lace-lizards that we soon perceived abounded here. The entire surface of the hardened mud, in other parts, was covered with *Cerithium palustre* and the large black *C. telescopium*, while here and there fragments of those bivalve Mollusks, that love the brackish water, strewed the soil.

On the margin of this dried-up Lagoon, were heaps of old decayed and moss-grown trunks, speckled with lichens and sprouting with fungi, rotting piecemeal in the black and slimy mud. Thousands of *Gelasimi* and other land-loving crustaceans, bustled about the surface of the ground, rushing into holes with the greatest trepidation, but nevertheless snapping, as they retreated, their huge single foot-claw, and thrusting it menacingly forth, when they reached the aperture of their burrow. In many parts of the yielding surface, well-beaten tracks were formed by our dingy lacertine friends, the giant *Hydrosauri;* and in other places, the soil was stamped with the foot-marks of deer, and grooved by the snouts of wild boars. The forest beyond was perfectly silent, and, sitting on one of the tall and blasted trees, was a solitary white heron, himself as motionless and silent as the rest of nature.

While cutting wood in the forest not far from the watering place, our seamen and carpenters suffered very considerably from the virulent acrid sap of the *Excæcaria Agallocha*, or a plant closely allied to it, which produced violent itching and inflammation of the face, hands, and wherever it came in contact. I remember, that near the Morotabas entrance of the Sarãwak river, the party sent on shore to cut wood, were also much annoyed by the acrid juice of a plant with a large, brownish, spherical berry, and smooth shining leaves. Not being then in flower, it was difficult to say to what genus it belonged, but most probably it was the *Stagmaria verniciflua* of Dr. Jack. Besides the chance of scorpion and snake-bites, and the certainty of being punished by innumerable musquitoes, a large species of Tabanus is very annoying to the naturalist in these forests, alighting on the exposed parts of the body, and producing a sharp bite; but the pain however is momentary, and not so poisonous as that of the mosquito.

Clinging to the flower-balls of a delicate-leaved Mimosa, were numbers of splendid bronze-green beetles, of the genus *Aromia*, which emitted such a powerful scent of attar-of-roses around, as to impregnate the air for some little distance. That showy looking insect *Purpuricenus* (*Eurycephalus*) *maxillosus* Oliv., or a closely allied species, with black and red velvety elytra, was found clinging to the bark of trees; and, alighting on the leaves in sunny spots, on the slightest alarm taking flight and soaring high above the trees, was a splendid *Therates*, a beetle of the family of *Cicindelidæ*, remarkable for their powers of volitation. The species I obtained had large strong jaws, enormous eyes, a wide head, beautiful dark burnished-bronze elytra, and orange legs and mandibles. One specimen I captured, had just regaled himself with a fly, which I allowed him to eat up, before I attempted to make him a prisoner. He held the unfortunate dipterous insect, which was of the size of an *Œstrus*, firmly with the dilated tarsi of the fore feet, had cut off the head with his powerful mandibles, and was busily intent in consuming the flesh of the inside of the thorax, shaking his prey occasionally like a tiger, which these Cicindelidæ most assuredly represent in the insect-world. Also, on the leaves, but totally unlike its volatile neighbour the *Therates*, was a species of *Cassida*, a pretty tortoise-shaped beetle, with the elytra margined with bright golden yellow, four dark blue spots at the angles, and the central part of the back of a brown bronze, with deep red markings. A most extraordinary-looking hymenopterous insect, belonging to the genus *Stephanus*, with a red head, a black body very much elongated, light brown, semi-opaque wings, enormous hind legs, and three long slender stylets at the end of the tail, hovered steadily around the trunks where the sunbeams penetrated, and seemed to delight to crawl up and down the bark. During flight it has a very remarkable appearance, reminding one somewhat of a heron on the wing, with its long legs awkwardly stretched out behind. In the fresh-water pools I obtained specimens of a large water-scorpion, near *Nepa rubra*, more than two inches in length, with a brown body, and blackish elytra. Its sting, the powers of which I unfortunately experienced, is much more severe than that of the *Nepa cinerea* we find in the ponds of Europe. A new species of *Gerris*, with a dull red thorax margined with black, and a dark line down the centre, with opaque black wings, was running, in its peculiar jerking manner, on the surface of the stagnant water. I was pleased to find these aquatic insects, as both water beetles and water lizards appear to be very scarce in Borneo, if we except the *Hydrosauri*, which are not entirely aquatic. I never came across, during the whole course of my wanderings, with a single species of *Salamandra* or *Triton*, or among insects with a *Hydrous* or *Dyticus*.

The woods of Leegeetan afford the large Hornbill (*Buceros Rhinoceros*) ; a Kingfisher of considerable size and splendid colouring (a species of *Dacelo*,) frequents the river brinks. A beautiful *Cypselus*, with a rich green metallic lustre along the back, soars high above the forest trees; while on the coast the *Hirundo esculenta* hovers incessantly to and fro, uttering its sharp and peculiar cry. A grey Heron perches on the lower boughs of the trees, and delights to fish in the ponds, feeding on crabs and frogs. A small sized Wood-pecker, and a large red-headed species with black wings and back, and a white belly, climbs up and down the forest stems in sequestered places. A black coloured bird, with two long feathers in the tail, skips rarely in the trees from spray to spray. A *Cuculus*, with a greenish-black back; and a small bird, with the feathers of the back and rump pilose and much prolonged, probably a species of *Chaunonotus*, are also found in the woods. In other parts of Borneo, I have met with a Tody with a red and yellow head, and another species with a black and yellow back, and salmon-coloured breast; a Thrush with a yellow back and black head, that utters a very sweet note among the Bamboo groves and thickets; a handsome Pigeon, with a green back and belly, and wings of reddish brown; a black Thrush, with a white abdomen; and a splendid ultramarine blue bird, with the neck, and belly black; a land Rail, prettily marked; a white-headed Falcon with reddish brown wings; a large horned Owl, and the minute Passerine species; the Griffin with a Falcon's beak, is also sometimes met with; and I have seen the Crowned Eagle, the Cayenne Barbett, and species of *Lanius*, *Bubutus*, *Garulax*, and *Calorhamphus*. The list might easily be lengthened, were it at all necessary in a short popular notice like this; but long dry lists of ornithological nomenclature would not be likely to interest the general reader. I may however offer a few words on the famous swallow that supplies the Chinese markets with nests, and pay a passing tribute to the extreme beauty of the Pigeons of this part of the world. Many of these belonging to the genus *Vinago*, are covered with feathers of rich metallic hues; in fact, the oriental Pigeons are the most beautiful creatures imaginable. Their air is full of softness, and their eyes of gentleness; their motions are all elegance, and their forms of the most graceful proportions. The turn of the neck and the carriage of the head are fraught with harmony; and the plaintive cooings of their voices, issuing from the dead solitudes of sombre woods, though somewhat mournful is soothing and agreeable to the ear. Playful in their motions, sportive in their caresses, they seem formed for love and dalliance in the dense forests they animate and adorn. The cooing of these birds in the tropics is somewhat different in sound from that of the Wood-pigeon.

About the rocky parts of the coast of Borneo, the *Hirundo esculenta* skims backwards and forwards all day long, uttering its little cheerful chirp as it eagerly pursues its insect prey. I have taken the nests in nearly every state from the sides of shallow caves, where they adhere in numbers to the walls, like so many watch-pockets. The eggs are white, with a slight pinkish tinge, and are generally two in number. The nests are either white, red, or black, and the natives maintain that these are built by three distinct species, with a white, red, and black breast, but this is erroneous. The Malays assert frequently, moreover, that the nests are formed from the bodies of certain sea-snakes, but there is no doubt that "agal-agal," a marine cellular plant, is the material employed. The Chinese lanterns are made of netted thread, smeared over with gum, produced by boiling down this same plant, which, when dry, forms a firm, pellucid, and elastic substitute for horn or glass. Other species of Swallows, besides the *Hirundo esculenta,* employ the same glutinous material in the construction of their nest; but it is always mixed up with grass and matted feathers, so as to render the nests perfectly useless in a commercial point of view.

Collecting the nests is often a very perilous operation, as may be seen on reading the following extract from Crawfurd's History of the Indian Archipelago. He is describing one of the most productive caves in Java, those of *Karang-bolang,* on the south coast of the island:—"Here the caves are only to be approached by a perpendicular descent of many hundred feet, by ladders of bamboo and rattan, over a sea rolling violently against the rocks. When the mouth of the cavern is attained, the perilous office of taking the nests must often be performed with torch-light, by penetrating into recesses of the rock, when the slightest trip would be instantly fatal to the adventurers, who see nothing below them but the turbulent surf making its way into the chasms of the rock."*

Before taking leave of this part of Borneo, I must make a few observations on the habits of certain crustaceans. On tropical mudflats, I was always very much amused at the multitudes of Crabs that take their pastime there,—those active, predatory, rapacious busy-bodies, presenting forms so anomalous, manners so strange, and motions so grotesque. As soon as the water recedes from the shore on the ebbing of the tide, and the large firm mudflats are left exposed, myriads of crustaceans of every form and colour issue from their various holes and hiding-places, to enjoy the heat, to forage for their food, and to propagate their kind. The males of many species, after looking cautiously about them, stalk a few paces with their huge single pincers raised in the air, which they snap frequently together, producing a slight clicking sound, then rushing eagerly towards their females, they seem to embrace with their arms their smaller and more dingy paramours. The salute is very brief, and is followed by the swift retreat of the lady-crabs into their different habitations. These belong chiefly to the burrowing *Macrophthalmi*. Many of the genera *Sesarma*, *Gonoplax*, and *Grapsus*, are however perceived equally well occupied. Creeping stealthily upon these are larger and more formidable Crabs, which come with sidelong steps towards their unwary neighbours, chase, capture, tear, and finally consume them. Others are content to forego their amorous dalliance, and help themselves to worms and little shell-fish, feeding alternately first with one hand and then with the other. Many again lie languidly along the mud, seeming very much to enjoy the genial rays of the sun in listless indolence; while others are watchful at the mouths of holes, ready to pounce upon the Jumping-fish and Squillæ that swarm about the mud, and which speedily disappear within their rapacious jaws.

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* Vol. iii., p. 433.

A very splendid species of *Cardisoma*, which I have named *C. Aspasia*, inhabits the steep muddy banks at the mouths of the rivers near this part of the coast, where it forms deep cylindrical burrows. It is excessively wary, retreating on the slightest noise into its subterranean domicile, from whence it is not easily dislodged. It appears to be less shy, however, as the evening advances, and is probably nocturnal in its habits, like some of the species of *Ocypode*. This lovely crustacean, nearly as large as the adult edible crab, has a purple shell margined behind with buff, and feet and claws of a delicate lilac.

The muddy banks of the Batang-Lupar, Sarăwak, and many other rivers of Borneo, are covered at low water by numerous handsome species of *Gelasimus*, among the number of which is an undescribed species which I have named *G. cœrulens*, from the beautiful blue colour of its carapace. I have seen the black mud in many parts assume quite a brilliant blue tinge during the heat of the day, at low water, when these crustaceans come forth to feed.

CHAPTER VIII.

LOO-CHOO—KOREA—JAPAN.

Loo-Choo—Mandarins—Visit a Missionary—Gardens of the Temples——Burial-ground — Tombs — Loo-Chooan females — Sheudi, the capital — Palace of the Viceroy — State of religion — Acquainted with Arms —Language —Money —Medicine —*Korea* —Physical appearance of the Natives—Costume—Moral Character—Arms—Boats — Punishments — An Anecdote —Beacon-fires —Island of Quelpart — Plants — Stone Images — Vegetation — Scenery—Birds—Fishes—Insects—Habits of Spiders—Molluscous Animals—Radiata —Sponges —*Sama-Sana* —Scenery —Vegetation—Insects —An Earthquake —*Koumi* — Scenery — Birds —Beetles—Grasshoppers — *Japan* — Physical appearance of the Japanese—Costume—Weapons—Shells—Volcanic Archipelago—Inhabitants.

On the 22nd of August, 1845, in company with Mr. Corbett, of the Royalist, I landed at some distance from our anchorage in Napa-Kiang harbour, on the other side of the village of Po-tsang, (or Pot-soong, as Beechey and others write it,) a small straggling hamlet full of temples, tombs, banyan trees, and salt-pans, with a neat, well-built little bridge, and a very long causeway. We were received on the beach by a large concourse of the natives, and as soon as we had disembarked, a venerable and good-natured mandarin of the second class, took us by the hand, and kindly led us towards the village. He spoke to us in broken English, asking us how we did;

what were our ages, &c. We made him understand that we wished to proceed to the residence of a French Missionary, who was living some little distance off, in one of the Joss-houses, occupied by the people of the Alceste at a former period. He comprehended in a moment, and accordingly most politely made us a bow, and led the way. Our road lay through very pleasant woods, where the Bamboo and Acacia, the Areca, Banyan and Cycas trees, formed an agreeable shade. In the temple, occupied by the Missionary, were the usual emblems of the Roman-Catholic Church, and walking about the ground, were numerous Bonzes, or priests of Buddha, apparently very poor and low in the grade of society. One old gentleman seemed very much disgusted with our Catholic friend, pointing with scorn at the parade of paintings and crucifixes made by the good Father. The coadjutor in the labour of this French gentleman, was a young Chinese, educated at the Jesuit College at Penang, who, as the Padre assured us, could converse well in Latin, Portuguese, French, Chinese, and Cochin-Chinese. The gardens of these temples are neatly and tastefully laid out, and among the flowers in the parterres I noticed the beautiful crimson blossoms of the *Hibiscus Rosa-Sinensis*, with the petals of which the Chinese black their shoes; the Prince's feathers (*Amaranthus caudatus,*) the *Gomphrena globosa*, and some very fine Cockscombs (*Celosia coccinea,*) their thousands of brilliant shining bracts glittering in the sun. These gardens and temples, occupied by the officers and crew of the Alceste, are rendered doubly interesting by the graphic and pleasing accounts of Hall and M'Leod. They are quiet, lonely, and secluded, and ornamented with beautiful walks and numerous trees. We rambled on among the tombs of the Loo-Chooans, which form one vast cemetery or city of the dead, and which from our anchorage, appeared as large and conspicuous as the living city of Napa. The tombs are all well-preserved, nicely chunammed, and of a dazzling whiteness. The tombs of strangers, however, are of an oblong shape, not formed like a horse-shoe as are those of the natives, and are embowered in trees; among them I observed the grave of the man who died belonging to the Alceste. Their respect for the dead certainly appears to be very great, and I could not help noticing the solemn demeanour of the old Chief as he pointed out to us the grave of our countryman. Having passed through an archway, we came suddenly upon a square in which were congregated many hundred women, each with a small basket, bargaining for rice and other necessaries, and laughing, chattering, and cheapening in the most discordant and emphatic manner. It was market-day among the good people of Po-tsang. All these lively and energetic females belonged to the lower orders, and rejoiced in countenances by no means attractive; the old hags, on the contrary, were about the most hideous objects I have seen in the course of my travels. An occasional exception to this ungracious and not-at-all-gallant picture, might be found in the person of a young girl or marriageable maiden, and the little brown babies were decidedly very funny. Proceeding on our walk, we arrived at the summit of a hill, from which elevated position we obtained an excellent view of Sheudi or Shui, the extensive and populous capital of the Great-Loo-Choo.

It is very delightfully situated in the bosom of a wooded and verdant valley, and appears to be well and regularly built. At some little distance from the city, we noticed the Prince's palace, a large square building surrounded by a high wall. We were informed that the Prince, or probably Viceroy appointed by the Japanese, is quite a prisoner in this royal abode, never being allowed to travel beyond the precincts of his enchanted castle. Near Abbey Point, in the rude cavernous recess of a rock, we saw the image of the Goddess "Kwan-yan," called by Beechey, the Goddess of Mercy, and of which he has given a representation in his work. The natives did not seem, however, to evince much awe or reverence as they passed this favourite deity; indeed Gutzlaff observes that "they disavow practical idolatry because their reason disapproves the theory; yet they do in fact persevere in their unreasonable worship." There are various other idols in other parts of the island, some formed of wood, and many carved out of stone. La Pérouse, who visited these people, observes, speaking of the inhabitants of Kumi, that "each had a dagger, the hilt of which was gold." Beechey has a variety of arguments to prove they were formerly acquainted with the use of arms, and, in connexion with the same question, Gutzlaff observes: "Upon inquiring, we found that they had among them the same severe punishment as at Korea; that they possessed arms likewise, but are averse to use them." Both Hall and M'Leod, on the other hand, aver that these people are totally unacquainted with the use of arms. Thinking to throw a little light on the subject, I enquired casually of A-sung, our Chinese interpreter, who was much among them, what they would do if they were attacked by an enemy, when he informed me that they had large stores of arms which he had seen, shields, spears, and bows and arrows, but that they wish to keep the knowledge of their existence in the island, a secret, even from their own people. Beechey remarks, that "the inhabitants of Loo-Choo have no written character in use, which can properly be called their own, but that they express themselves in that which is strictly Chinese." They have not preserved, even if they ever possessed in their early state, any original written language, but they have adopted that of Japan. Both the French Missionary and A-sung, our interpreter, assured me that it was strictly Japanese. The Loo-Chooans, certainly must originally have been a colony from Japan, although in the present day they disclaim all connexion or acquaintance with that empire. In a conversation with Gutzlaff, they even affirmed that three Junks from Satsuma in Japan had been driven hither by stress of weather. During our visit, there were numerous Japanese vessels lying in the harbour, no doubt tribute Junks. The Catholic Priest informed me that he had not succeeded in making a single convert, and though his tenets were smiled at as being too absurd for credence, yet he was treated with the greatest respect, mingled, however, with a little jealousy. The higher classes are probably very well contented with the precepts of Confucius, and the lower with the doctrines of Buddha, both systems having numerous proselytes among the Loo-Chooans. Many, however, even among the most wealthy and intelligent, are free-thinkers, and seem to trouble themselves very little about superstition in any form.

They are said to be unacquainted with the use of money, though they received dollars in payment for a horse, pigs, and several descriptions of provisions, from the Captain and some of the officers of our ship; and Gutzlaff says, that "the Chinese tael and cash are current among them, but very scarce." While staying here, the most celebrated native doctor of Napa treated A-sung for rheumatic pains, with hot cataplasms, made of the recent aromatic leaves of the Sansjo (*Xanthoxylon piperitum*) and, as he informed me, with considerable benefit. The Ginseng (*Panax quinquefolium*) is held in as much repute here as it is in China.

During this year, the Samarang was engaged in surveying the large island of Quelpart, and the numerous group of smaller islands constituting the Korean Archipelago; and as our opportunities of examining some of the more interesting ethnographical peculiarities of the singular people inhabiting this little-known region of the globe were rather numerous, I shall here offer a slight sketch of those manners and customs, which, at the time, were regarded by me as worthy of note, and as such committed to paper for the amusement of friends at home.

The Kooraï or Koreans are said to have come originally from a country to the northward of Pe-tche-li, and although now forming a separate nation, governed by a king, they are, in a measure, tributary to China, as before the conquest of Korea by the Chinese, they were the subjects of the Japanese empire. In personal appearance, they resemble the natives of Siberia and Tartary. Like most Mongolians they have a tawny skin, prominent cheek-bones, some obliquity of the eyes; a rather prominent nose, thick at its base, and wide at the nostrils; strong, well-developed jaws, and long, lank, straight, black hair; but like some tribes of northern Asia, their beard is tolerably thick, and their eye-brows bushy. Their physiognomy is less effeminate than that of southern races, their average stature being greater, their bearing bolder, their Tartar-like features more prominent and striking, and their beards and moustaches being frequently long and flowing. One of the most striking peculiarities which all who have seen them have noticed, is the method of confining the hair of the head in a delicate network, beautifully formed of a fine material resembling Coir, and of a glossy black colour. The hair being all drawn upwards towards the crown of the head, is tied at the summit in a neat and rather graceful topknot, without the help however of pins, as at Loo-Choo and the Meïa-co-shimahs. The young unmarried men and boys, however, have the hair parted in the middle, gathered behind, and descending in two long plaited tails, that hang down the back somewhat in the fashion of those of the sons of Han. Frequently a white band of bark or leaf is worn across the forehead, to restrain the loose and straggling hairs.

Their costume, though formed of a uniform peculiar to China, Japan, and all this part of the world, varies considerably from all other nations in unessential details. The Mandarins, or chiefs of the better class, wear long gowns or mantles, with loose hanging sleeves, having red or green cuffs. These robes are often of silk stuff, and have a very pleasing and picturesque appearance. Their pantaloons hang in a rather loose bag below the knee, their gaiters or socks are of white linen cloth, and their neat leathern shoes are very much pointed and turned up at the toes. Their hats are of enormous size, with very broad brims, and are of a slight and slender texture, being ingeniously made of a net-work of bamboo, stained black. The crown is very peculiar, high, and conical, and two or three peacock's feathers appended to a curved ivory ball on the pointed apex, hang gracefully over the capacious brim. The hats of the Mandarins are usually furnished with strings of large amber beads, to fasten them under the chin. An under tunic of white, and a broad silken sash, usually complete the dress of these grandees. They generally carry, moreover, a small piece of black bamboo, with a coloured riband twisted spirally round it, which is their wand of office, and on which their rank is written. The soldiers wear a plaited string from the crown of their hats, with a quantity of red horse-hair depending from it at the hind part of the brim. In winter time, some of the lower orders wear huge fur caps, made of wolf or lynx skin ; and the heads of others are covered with enormous brown or black sombreros, fashioned from a kind of felt, while many again affect huge cone-shaped hats, covered with painted oiled paper. Serfs and husbandmen are very loosely clad, and go about with the legs and fore-arms bare, and wear grass sandles on their feet. Both men and boys have a habit of carrying long staves, which gives them an appearance, when seen at a distance, of being armed with spears. The females we saw were very ugly, very dirty, and much more degraded in appearance than the men.

The natives of Korea, or more properly of Chaou-Seen, are but little advanced in civilization, owing doubtless to the repugnance they have to hold any intercourse with other nations, not even their neighbours, the Chinese, being permitted to settle in their territory, and their trade with that country and with Japan and Tartary is exceedingly limited. They invariably repulsed us in the same spirit on our attempting to invade the sanctity of their towns and villages, not even allowing us to enter within the walls of their cities. With the same exclusive feeling and jealous alarm of foreigners, they also evinced a great objection to receive anything from us as presents. During our surveying duties, where it was indispensably necessary to land and erect marks, they frequently showed symptoms of hostility, and when not opposed in a determined manner, were inclined to assume a hectoring demeanour, threatening and commanding us to retreat; but we always found that their courage consisted chiefly in a system of intimidation. They are, however, very good-humoured, and seem to enjoy anything like a joke exceedingly. All appear to be passionately fond of spirituous liquors, nor can I say much for their morality of conduct. They are great smokers, carrying continually in their hands a long-stemmed pipe, with a diminutive brass bowl, which they fill and empty at brief intervals.*

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* The pipes of the Indo-Chinese races, including the Tartars, Chinese, Koreans, and Japanese, are provided with a small metallic bowl, and usually a long bamboo stem, for with persons who are in the habit of smoking at short intervals all day long, a large bowl would be inadmissible. By inhaling but a pinch of tobacco on one occasion, they extend the narcotising influence of a larger pipe over a greater space of time. Nations that smoke larger pipes adopt some other material for the bowls, as metal would become too hot: thus the Chibook of

Their arms consist of bows and arrows, spears, and a few rude matchlocks, constructed in the Chinese fashion; and in some of their walled cities they have forts strongly built of stone, and mounting guns. When they wish to intimidate their enemies, and make a great show of martial power, they collect all the heroes, with their swords and spears, and assemble by hundreds, mingling their shouts with the discordant sounds of gongs, trumpets, and a harsh shrill instrument resembling in noise the bagpipes. I have heard some among them, however, play very plaintive melodies on the flute, with much taste and proficiency.

They do not appear to be a maritime people, their boats being neither large nor numerous. As in China and Japan, the use of oars is unknown among the Koreans, the boats being always propelled by means of sculls, the boatmen standing over the loom, and bending his body backwards and forwards. I have seen as many as ten

Turkey is made of "Samian ware," a kind of red-brown clay; the Meerschaum of Germany is formed of a yellowish-white steatite; the pipe of Holland is of porcelain, and that of our own island of unglazed clay. Among the Bashee group, and more particularly on the island of Ibayat, the natives form very elegant and commodious pipes from different species of shells, the columella and septa of the convolutions being broken down, and a short ebony stem inserted into a hole at the apex of the spire. A pipe of this manufacture, in my possession, is formed from the *Mitra papalis*, and I have seen others made out of *Mitra episcopalis* and of *Cerithium* and *Terebra*. At the Cape of Good Hope I procured some pipe-bowls, made by the Kaffirs, from a black and from a green stone, but without sculpture. Old Indian pipes have been found in America also fashioned out of green stone. The sailors belonging to the Samarang having lost their pipes in the Sarawak river, set to and in a very little while manufactured excellent pipes from different sized internodes of the bamboos that grew around them.

men working at one enormous long scull. For landing in the surf and among the rocks they employ a sort of catamaran or raft, with an elevated platform large enough to contain eight or ten persons, which is sculled in the manner of a boat. In some instances they employed these rafts to destroy our surveying marks, when our boats, giving chase, would pursue and capture them, often giving rise to very laughable scenes When a man becomes troublesome or offends in any way, he is brought before the chief Mandarins, who first abuse him, and then order him to be seized and thrown down, when he receives a certain number of severe blows with a flat baton (formed like an oar and about six feet long), on the bare hams. Many carry about them severe traces of this bastinado practice in the forms of scars and ulcers.

On our approach to a village, the poor frightened inhabitants first drive away all their bullocks beyond the mountains, generally, however, leaving one of the leanest behind as a tempting lure. This being effected, they then assemble in crowds upon all the highest hill tops, until they are assured of our pacific intentions, when they cautiously descend and approach, and begin curiously to examine our persons, admiring the fine texture of our linen, wondering at our gold bands and buttons, and still more at the pinkish tinge of our skins, and the brown colour of our hair. On one occasion we landed in a beautiful little bay where there was a village, and along the shore a wood of large-sized fir-trees. By an offer of cloth and sweet wine the Captain obtained permission to cut down some of them; but no sooner did the carpenters lay the axe to the base of one of the finest, than an old man interposed, with gesticulations and tears in his eyes making us signs that the trees were his. On our men proceeding in their work, the poor fellow grew quite frantic, clasping now the trunks of his beloved trees, and then the knees of those who were felling them, using every possible sign and gesture to save his firs from destruction. He was however eventually pacified by bottles of sweet wine.

The same custom occurs along the coast of Korea, as among the Malays, namely, lighting beacon fires on the summits of the hills and projecting points of land, to indicate the movements of a supposed enemy. La Pérouse alludes to the same procedure where he says: "It is probable we occasioned some alarm on the coast of Korea, for in the afternoon we perceived fires lighted on all the points."

The large island of Quelpart or Quelpoert, which we circumnavigated and surveyed in the boats, is the most southern island of the Korean Archipelago. The proper name is the same as that of Korea, namely, "Chaou-Seen," and it is somewhat remarkable that the name of the principal city, King-Ka-Tou, is the same as that of the peninsula. Quelpart may be said to be an oval ironbound island, covered with innumerable conical mountains, topped in many instances by extinct volcanic craters, and all bowing down before one vast and towering giant, whose foot is planted in the centre of the island, and whose head is lost in clouds. The whole surface, including the plains and vallies between the hills and even that of the mountain-flanks, is carefully, richly, and most beautifully cultivated and covered with a pleasing verdant vegetation, laid out in fields divided by neat walls made of piled-up stones. It is surrounded on all sides by "black waves, bare crags, and banks of stone," covered with limpets and Chitons, and tenanted by troops of dusky cormorants. As we coasted along the land, crowds of wondering natives appeared on every hill-top, staring at the adventurous strangers who had come to visit their far distant country, and perchance disturb the peaceful tenor of their lives. In many parts along the coast the rocks are very lofty, and quite perpendicular, and are adorned in many instances with splendid waterfalls,—

> "Where a wild stream with headlong shock
> Comes brawling down its bed of rock
> To mingle with the main."

In one part only was the coast level, and huge heaps of weeds lay along the shore. Numbers of meagre Cormorants sat in long black rows upon the stones; flocks of dappled wild Ducks were feeding at the margin of the water; a species of Tern, with a long black crest, was hovering above the surf, and at some distance from the shore were hundreds of large white Gulls, sweeping the surface of the sea.

A large and beautiful open blue Campanula was very conspicuous in many parts, as were also the handsome yellow Liliaceous plants allied to *Hemerocallis disticha* and *H. flava*, which grew chiefly on acclivities, and the large and showy Tiger-lily (*Lilium monadelphum*). There was also a small and pretty Hyacinth with delicate blue blossoms; two or three species of Juniper, many of Oak, three of Fir, several of Thuja, two kinds of Hazel, and one of Myrtle. The Fumitory, the Lychnis, the wild Onion and Silver-weed were common everywhere. La

Pérouse speaking of Quelpart, observes: "Unfortunately the island belongs to a people to whom all intercourse with strangers is prohibited, and who retain in slavery all who have the misfortune to be wrecked on their shores. Some of the Dutch sailors of the 'Sparrow-hawk,' after a captivity of eighteen years, during which they had received severe bastinadoes, found means to steal away a bark and get to Japan, whence they reached Batavia, and at length Amsterdam." He observes, moreover, "this island which is known to Europeans only by the loss of the Dutch ship 'Sparrow-hawk' in 1635, was at that time under the dominion of the king of Korea." Mr. Gutzlaff, who visited some of the islands of the Korean Archipelago, with much truth makes the following regretful remark:—"Walking," he says, "over these fertile islands, beholding the most beautiful flowers everywhere growing wild, and the vine creeping among weeds and bushes, we accuse the 'lord of nature,' man, of shameful neglect; for he could have changed this wilderness into an Eden."

In many parts of the Archipelago, the hamlets and houses of the more wealthy members of the population are delightfully situated, being frequently embosomed in groves of umbrageous trees with running rivulets beside them, and all around and towering up behind, gently swelling hills covered with verdure, and with herds of oxen grazing; and when placed near the sea-side, there is generally a fishing-wear close at hand. Their houses consist of a sitting-room, a sleeping-apartment, and a shed used for culinary purposes, where are observed large earthern vessels for holding rice and water. In their towns are frequently seen rudely carved stone-images, and it may be observed that a very striking similarity exists between these graven boundary stones of the cities of Quelpart, and the Hermæ of the ancient Greeks, and the Termini, or Lapides Terminales, of the Romans. The earliest form in which the divinities of classic mythology were represented, was an unhewn stone, which afterwards assumed the modification of a square block, and subsequently grew, when the art of Sculpture became more elaborate and refined, into a polished pedestal, surmounted by the head of the favourite deity. These were placed in the front of temples, and other public buildings, and at the corners of streets and roads, and frequently received the tribute of divine honours. Whether these Korean Hermæ were regarded with religious veneration by the inhabitants of Quelpart, I am unable to state, but I may point out the remarkable fact of the existence of similar sculptured posts in the Dyak villages of the island of Borneo, where they occupy the same relative positions and probably serve the same purpose. Lieut. Kolf, in his Voyages of the 'Dourg,' a Dutch Brig of war, states that among the Arafuras inhabiting the Arru islands, one of his officers found "an image rudely formed of wood, together with a post on which different figures such as snakes, lizards, crocodiles, and human forms were carved, and which the owner stated to be intended for preserving the house from evil spirits."

Crawfurd, in his history of the Indian Archipelago, alludes to the existence of images of a similar nature in Java: "In the least civilised parts of the island, as the mountains of the Sundas, and particularly the eastern province of Banyuwangi, there are found a variety of images extremely rude and ill-fashioned, and which, frequently, by the extensive decomposition which their surfaces have undergone, appear of greater antiquity than those already described. These are, in all probability, representations of the local objects of worship among the Javanese, before they adopted Hinduism, and which probably, as is still the case in Bali, continued to receive some share of their adoration, after that event." The appearance of the basaltic columns that adorn the perpendicular sides of many of the islands was very grand and imposing, simulating in several instances ruined monasteries, old time-worn buildings, and picturesque cathedrals, with high fretted pinnacles,

> "rocks sublime
> To human art a sportive semblance bore,
> And yellow lichens coloured all the clime,
> Like moonlit battlements and towers decayed by time."

On the rugged acclivities of several steep, rocky islets, hundreds of Stone-flowers, as the sailors call them, (*Lycopodium lepidophyllum*,) were expanding their rose-like heads in every direction, and the grey summits were often garlanded with graceful hanging festoons formed of the wild vine and various other climbers.

Pines of several species, oaks, maples, rhododendrons, brambles, azaleas, roses, violets, camellias, myrtles, mulberries, junipers, eugenias, mallows, sages, hypericums, asters, gnathaliums, and hundreds of other plants are observed in these islands; the parasitic *Cassythis filiformis* is found clinging to the low bushes, and weaving them together in an almost impervious mass; the larch and the willow, the *Ficus tinctoria* and the *Diospyros*, the Bamboo and the Cycas are spread abundantly over every part; a few labiate and scrophulariaceous plants were visible, and several species of *Chenopodium* and *Asclepias* were common everywhere. Grasses and compound flowers were not very numerous, but I observed a pretty good sprinkling of Cryptogamia, especially among the ferns and lichens. On the sides of some tombs on a little island near Quelpart, a species of hymenopterous insect of the family *Eumenidæ* builds a neat hemispherical nest of the size of a filbert, composed of clay and comminuted grass made into a kind of mortar; the interior is lined with a smooth polished plaster, and contains a single larva with the body slightly bent upon itself.

On one small island where we watered ship, there were fields of Tiger-lilies, and in another part barley was growing, and clumps of dark-green pine-trees overhung the precipitous side where masses of lichen-stained rocks lay crowded and jumbled together. The whole surface of the island was covered with huge boulders and loose stones overgrown with vegetation. In one part was a large square enclosure with low solid walls of piled-up stones, containing the graves of two individuals, known as such by the most grotesque tombstones I ever saw in my life. As the sun was shining brightly and the day very warm, insects were numerous, more especially the Diptera, which were far more brilliant and in larger numbers than I had anywhere seen, even in the tropics;

> "these little bright-eyed things,
> That float about the air on azure wings,"

were pitching on the leaves, whirling round the flowers, and hovering gaily about the bare, sunny sides of the big stones, with the greatest vivacity, imparting much liveliness to the entire scene. In another part of this pretty islet, however, the appearance of affairs became slightly changed, and this occurred in a dull swampy morass where huge reeds grew, and where, as you stooped down and looked curiously, as I did, among their tall, slender culms, dozens of lurid-looking vipers might be seen trailing their slow length along the surface of the ground, and winding their sinuous way quietly into the dull distance of the pigmy forest. It was in truth a noisome place, "redolent," as Dickens would say, "of all sorts of slabby, clammy, creeping and uncomfortable life." Frogs, however, towards the evening were numerous and cheerful, and the glow-worms lighted up their tiny lamps, but still the gloom of that dark spot where the vipers so abounded continued for some time to haunt my mind. It seemed to be a scene such as Spencer must have presented to himself, when he described in his "Faerie Queene" the subsidence of the waters of the Nile after the fertile slime, according to his ideas of the spontaneous generation of animals, had covered the plains:

> "wherein there breed
> Ten thousand kinds of creatures, partly male,
> And partly female, of his fruitful seed;
> Such ugly monstrous shapes elsewhere may no man reed."

In some parts of Korea the land exhibits the appearance of parks and meadows, with clumps of firs and other trees, among which may be noticed the oak. The *Vitis Indica* is seen trailing among heaps of stones; the *Compositæ* begin to appear, among which may be noticed a Coreopsis and an Aster; a few Cacti mingled with Sedums, aromatic *Labiatæ* and *Scrophularineæ,* and here and there a Cruciferous plant, caused the vegetation to assume somewhat the appearance of what we are accustomed to see in Europe, but strangely mingled with such tropical forms as *Euphorbiaceæ, Leguminosæ, Rhizophora Mangle,* and *Hibiscus tiliacus.*

The scenery of these islands reminds one very much of our own woodland haunts; for, when the sky is bright, and the sun is powerful on the ground, the retired dells, and plains, and shady nooks are instinct with life. Gaudily-tinted butterflies sport around, feathered warblers twitter in the trees, and crowds of insects spin about the flowers. Among the birds, " Great Nature's happy commoners," were seen the modest Pigeon, cowering in some deep recess; the Flycatcher and the Butcher-bird, busily intent on prey; the showy Woodpecker, fluttering in its pride, and clinging to the boughs in every kind of fantastic attitude. Troops of white, long-necked Herons ranged themselves along the padi-fields, greedy after frogs; nor were " lingering notes of sylvan music" wanting, as the evening drew on apace; a bird with a note like the nightingale, and a species of Thrush, warbled very prettily; and at early dawn, the Lark, that glorious minstrel-bird, sang loud and joyous. Many other birds, well known in England, were busy in affairs of love. The Raven sat quietly perched upon the stunted trees, or croaking as he sailed familiarly around us; the Wren, the Sparrow, and the Blackbird were common in the thickets; the Kingfisher glided by the narrow brooks; the Swift and the Swallow clung to the rocky cliffs, or wheeled in circles through the air; the Cormorant sat grave and judge-like on the coral reefs; the Sea-gull screamed about the ripple of the tide; and Ducks and Divers were disporting themselves on the waters of the bays. Most of these, however, were of different species from those that inhabit the countries of Europe. When I first saw the Wren in this far-off region, it instantly recalled scenes familiar to me in childhood by the mere force of association, for certain animals are always connected in our minds with peculiar haunts and localities. We never think of the Chamois, but we fancy him clinging to the cliff; of the Antelope, but we imagine her bounding across the plain; of the Tiger, but we ruminate on drear and lonely jungles; of the Wolf, but we dream of forest gloom; or the Hyæna, but we picture to ourselves grave-yards and desolate burial places. The Spoonbill, the Quail, the Curlew, the Titmouse, the Wagtail, and the Teal, are also met with in the Korean Archipelago.

I have but few words to say with reference to the fishes of this group, the habits and economy of these scaly denizens of the deep continuing to remain almost a sealed volume even to the Naturalist. Solitary and retiring, they elude the scrutiny of curious man in the vast regions of old "ocean's grey and melancholy waste," or when "but dimly seen" up rivers and in shallow bays, or playing among the coral reefs, such is in general the rapidity of their movements, that the most eager scientific eye cannot trace the nature of their proceedings.

The fishes of the Eastern Seas glitter with gold and silver, their sides are marked, banded and spotted with the most vivid colours, and as they cleave the transparent water round the coral reefs, sporting playfully or resting motionless on their vibrating pectorals, they fascinate the eye fully as much as the large gaudily-coloured Lepidoptera do upon the land.

Among the Islands of the Korean Archipelago the children use the dried spiral eggs of a species of Skate, or some other cartilaginous fish, as rattles, having first introduced a few small pebbles to assist in making a noise. Beautiful azure Serrani and party-coloured Scari people the calm waters within the coral reefs. Thousands of other rock-fish are also met with in every possible variety of colour. One species swims in shoals, and is of the deepest and most brilliant ultramarine blue; others are vivid yellow, while many again are striped, banded, or furnished with crimson tails or bright green fins, reminding one of the fish Milton alludes to, which

> "show to the sun
> Their waved coats dropp'd with gold."

Various species of *Carassus*, *Coboeta*, *Lenciscus*, and other genera, were observed by us among the islands.

The Entomology of these islands doubtless is very rich in new species. The large black and white butterfly *Histia Leuconome* is common both among the Korean Archipelago and in the Meïa-co-shimah group. It wanders lazily along on heavy flapping wings, a little above the low trees, in shady places. On thistle-heads an elongated polished green *Cerambyx* is seen, which diffuses a very powerful odour of attar of roses, like the agreeable perfume emitted by the *Cerambyx rosalia* of the Pyrenees. Another very common beetle is the *Pristonocerus cæruleipennis*, a beautiful blue insect with a yellow head; while on the ground, in shady places, a splendid new species of Carabidæ (*Carabus monilifer*, Tatum,*) is met with in considerable bundance. Dull green *Cetoniidæ* are also numerous among the grassy parts of the islands; and a species of *Passalus* is found among the dried Algæ along the strand. In the evening *Lampyridæ* and several species of Stag-beetles (*Lucani*) fly about in company with *Geotrupes* and *Aphodii*. Hundreds of the long-horned, beautiful, little *Adelæ*, day-flying Moths, with wings that in glossiness and brilliancy resemble burnished steel, were flying in companies of thirty and forty in rapidly revolving circles above the low bushes, thus disporting themselves in the heat of the noon-day sun, contrary to the usual custom of nocturnal Lepidoptera. Some other insects, as *Œcocophoræ*, *Sesiidæ*, or diurnal humming-bird-Hawkmoths, and various *Uraniidæ* have the same habits. Flying heavily about the lower bushes, or clinging to the stalks of the tall grass, were several species of *Trochilium*, some very handsomely marked, and others apparently similar to those of Europe. A species of Earwig, very closely allied to our *Forficula auricularia*, but somewhat larger, was observed to be common among the dead leaves that cover the ground in the pine-woods; and here the huge *Dynastidæ* and *Onthophagi* of the tropics seemed to have given place to the numerous sub-genera of the *Geotrupidæ* of more temperate regions, and I began to recognise many forms belonging to this extensive family once familiar to my eye in England. A Spider, belonging to the genus *Attus*, was observed by me among the thousands of dead *Truncatellæ*, that occupy the holes and corners of the rocks in every part of these islands, which forms a convenient abode in these small shells, lining them carefully with a fine silken tapetum. Near the sea-coast, a minute species of *Pagurus* was found occupying these little truncated univalve shells, crawling about by thousands. Our spider, however, is unable to move about with its borrowed house in the manner of those pirate crabs, but either sits sedentary in its den, or ventures forth at intervals on its predatory hunting excursions.

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* Ann. and Mag. Nat. Hist. vol. xx, p. 15.

Among the rocks of a small islet near Quelpart, the largest of the Korean islands, there is a species of Spider which forms a very ingenious dwelling, which may be compared to that of the Swallow, whose nest affords such an important article in the gastronomy of wealthy Mandarins, (the *Hirundo esculenta,*) but adhering to the rough surface of the rock in a reversed position, resembling a watch-pocket upside down. It is composed of a substantially-woven silky material, and firmly secured by means of a glutinous secretion. The ingenious little builder and proprietor of this strange castle in the air, lets himself down by a rope-ladder, or, to speak less fancifully, by a fine spun web, which he manufactures for the purpose out of the substance of his body as required, he himself serving the purpose of a weight; "deducit stamina, ipso se pondere usus," as Pliny observes, when treating on these animals in his chapter "De Araneis." In the eaves of the thatched houses of the Koreans, I observed that a large black-coloured species of hymenopterous insect forms long cylindrical holes, lined with comminuted straw made into a kind of mortar by being mixed with a glutinous secretion; at the bottom of this tube the mother deposits her eggs, which are shut out from any external communication by means of a thin partition made of a substance resembling "papier maché." Another Wasp constructs a mud hut for its future progeny against the sides of the walls, having a small round perforation on the lower part, which serves as a door.

A milk thistle with long spiny leaves, is rather common on some of the islands of the Korean Archipelago, on the large purple flowers of which I frequently found one or two specimens of a species of *Aromia,* which diffuses a powerful odour of attar of roses. In markings it approaches to the *Polyzonus bifasciatus,* but differs from it in having the thorax spined and in other characters. Among other insects met with by me in these islands, were a dark burnished green *Eumolpus;* a bronze-brown species of *Silphodes,* allied to *S. Philippinensis* of Westwood; a new species of *Dorcus,* and a *Lucanus* allied to *L. Saiga* of Olivier; a new species of *Bolboceras* (*B Koreensis,* Adams and White), with a black thorax, and black and brown elytra; an *Adoretus,* of a rusty-brown colour, allied to *A. ranunculus;* a new species of *Mononyx,* of a dull blackish-brown, which hides in the sandy soil, and when caught feigns death; and a *Scutigera,* found under stones, and which when disturbed runs with great celerity. Besides these may be added a species of *Scarites,* entirely of a shining coal-black colour, which is very active, running about all day among the heaps of sea-weed thrown up along the beach. When approached it burrows rapidly in the sand, bites very severely, and makes vigorous efforts to escape. It is a most predacious creature, feeding greedily on the *Talitri, Gammari,* and other small Crustacea that abound in these situations. I have watched them enter the holes in the sand, and on giving them insects of any description, they would seize them savagely with their powerful jaws, and rapidly tear them in pieces. I have found this same insect lying concealed in the burrows of a small *Ocypode* that perforates the sandy soil in all directions, and which most probably forms part of the prey of this carnivorous insect. Many other *Coleoptera* besides the *Scarites* appear to have the same habit of burrowing in the sand; as the *Hesperophilus arenarius,* and some species of *Bledius* and *Dyschirius.* At the back of the Isle of Wight I have observed a large beetle with similar habits.

Several handsomely marked varieties of *Stomatella rubra,* besides the *Stomatellæ auricula* and *sulcifera,* and *Stomatix phymotis* and *duplicata,* were found strewing the beach of some of the coral islands, mixed with a species of *Crepidula;* and in the deep water between some of the wall-sided basaltic islets a rich harvest of *Terebratulæ* including two large characteristic new species of a beautiful and delicate red-rose colour. The former shell occurred in great numbers, and was observed washed up along the coasts filling the holes of the rocks; thus proving that typhoons and violent tempests in their agitation of the sea penetrate to very considerable depths below the surface, requiring these delicate shells to be anchored for further security by a byssus to the stones at the bottom. Submarine agitations have been known to reach to a depth of 200 feet, and so violent in their operation as to break rocks in pieces. A single valve of a large and interesting new species of Cockle (*Cardium*

Bechei, Adams and Reeve) was obtained by the dredge from the same locality, and in the straits separating Korea from the island of Kiusu, one of the Japanese group, a specimen of the remarkable *Fusus pagoda*, together with several scarce *Nuculæ* and some *Murices*, among which was a magnificent new one I propose naming in honour of Sir William Burnett, were procured. The rocks of the Korean islands were covered with a large kind of *Monodonta* which boiled with a little salt, were excellent eating; adhering to the stones was a *Mytilus*, which, when masticated, was of a peppery taste; and the mud-flats in the neighbourhood of fishing-wears, were covered with the *Cardium Sinense*, and a species of *Bullæa*; while the rare *Lingula tumidula*, Reeve, was found buried a little below the surface.

The *Cryptostoma* generally inhabits very deep water. It is cautious and timid in the extreme, contracting its body on the slightest touch. When, however, it fancies itself secure and unobserved, it gradually expands its shapeless form, protrudes its long large foot, and explores the surface on which it crawls, with a small finger-like process, in the manner of a leech before fixing itself. It progresses with a tardigrade movement, sliding like a Limax, on its ventral disc, the short tentacles exserted, and the posterior lobes of the mantle dilated. It is closely allied to *Natica* in every particular.

The *Eburna* is leisurely in its movements, exserting its tentacula and crawling with a slow and measured pace. It is, however, quick and rapid, when alarmed, in perceiving the enemy, and immediately retracts the soft parts within the shell. Swainson states it has no operculum, which is not correct. The mantle of this species is of a dull, dirty pinkish white, covered with large irregular shaped, reddish-brown blotches, distributed in no regular order; the siphon is marbled with the same colour, but of a lighter shade; the tentacles are dull pinkish-white. Living *Eburnæ* are very common in the China sea. They generally live in a muddy botton, and in about fourteen fathoms of water. The Chinese fishermen along the coast frequently bring them up in their nets, together with *Dorippe*, *Dromia*, and other Crustaceans; and I have seen them carefully set apart in the stern of their craft, as if for the purpose of being eaten.

Among the islands of the Korean Archipelago, the coral-beds are very splendid, and appear, as you look down upon them, through the clear, transparent, water, to form beautiful flower-gardens of marine plants. The polypi which protrude their hydra-forms, are coloured green, blue, violet, and yellow, which gives the corals a very different appearance to the dry, calcareous masses seen in museums, and calls to mind the exclamation of St. Pierre: "Nos livres sur la nature n'en sont que le roman, et nos cabinets que le tombeau." Indeed few sights of nature can exceed, in beauty and interest, these submarine parterres, where, amid the protean forms of the branched corals, huge madrepores, brain-shaped, flat, or headed like gigantic mushrooms, are interspersed with sponges of the deepest red, and huge asterias of the richest blue. But as Spencer very properly observes,

> "Much more eath to tell the stars on hy,
> Albe they endless seeme in estimation,
> Than to recount the seas posterity:
> So fertile be the floods in generation,
> So huge their numbers, and so numberless their nation."

Among these numerous small islands of the Korean Archipelago, *Sponges* are very plentiful, and in some spots may be collected in almost any quantity. They are also easily studied here in a living state. Apathetic and immovable, Sponges may be said hardly to exist; nourished by permeating canals, which pervade in every direction their porose bodies, they have properties but no instincts, attributes but no sensations. Their living and gelatinous crusts show no vital energies, save the ceaseless vibration of innumerable cilia, that properly belong to animal existence. Mechanically the surrounding fluid moves in through myriads of pores and larger vents, and then they grow rooted and immovable, and gradually assume their specific forms and full dimensions. Soft and delicate, they love the deep still waters of the tropic seas, where, in obscure recesses, they propagate, and grow, and die. Among the islands I enumerated ten or twelve well marked species which are most likely new. Some were flat, and split into numerous riband-like branches, others were round and digitated, others filiform, elongated and cylindrical, while some were in the form of hollow tubes; others form delicate lace-like aggregate cells, others wide cancellated infundibuliform cups. Some again have broad scalloped rounded leaves, and others dense white branch-like foliations, some are hard and horny, some quite solid with calcareous spicula, and others loose, light, and very expansible.

Various singular species of the fleshy-lobed *Sarcophyta* and handsomely coloured varieties of *Tubastræa*, with numerous other showy-looking Corallines were common on all the beaches.

Leaving Hong-Kong on the 1st of April, we touched at Batan on the 17th of May, were at Ibugos on the 19th, at Bayat on the 20th, sighted Botel Tobago on the 2nd of June, and on the 3rd landed and examined the small isolated island of Sama-Sana, of whose existence on the surface of our globe serious doubts had been entertained. On landing in the boats we noticed two large junks hauled up high and dry upon the beach, and on inquiry through our Chinese interpreter found that they had just brought emigrants from Chin-Chu and Amoy. On proceeding to their village, while the Captain was engaged in fixing the position of the island and taking the necessary observations, I found about two hundred people dressed in the manner of the lower orders of Chinese, with the features of Tartars or Cochin-Chinese, living in houses wretchedly dirty, and constructed in the manner of those of the poorer classes of Pa-tchung-san. With much politeness these poor islanders led me into one of their hovels and brought me Samschiew, rice, boiled lily-roots, dried mollusks (*Haliotis*), and roasted ground-nuts or pods of the *Arachis hypogea.* They had brought a beautiful valley in the vicinity of their hamlet into an excellent state of cultivation, growing rice, sweet potato (*Batatas edulis*), Indian corn and ground-nuts, with a little tobacco. They appeared to be much addicted to chewing the areca-nut, and betel-leaf, and were, moreover, almost continually smoking. The women were very ugly, even for members of the Mongolian race, but by no means shy or distant, as is generally the case in these countries. An old man at parting gravely placed upon my finger a ring made from a species of *Conus*, with the spire and produced part of the body-whorl ground down. In a ramble through the island I procured specimens of a beautiful *Polychrus*, (a species of Lizard,) and noticed the lovely green Sizé Moosee or *Tachysaurus Japonicus*, and a small brown species of *Zootica*. Frogs were numerous in the padi-fields, contrary to what might have been expected on so small an island. The land and fresh-water shells were similar to those of the Meïa-co-shimahs, namely a small brown snail, a *Paludina*, and two species of *Lymnæa*.

Herons, snipes, and plovers were numerous on the island. Among the trees the Banyan and *Ficus tinctoria* formed in many parts dense shady groves. In the course of my rambles I made a capture of a large Dynastes, several Cetoniæ, and a splendid new member of the Curculio family, a species of *Platyrhynchus* allied to *P. multipunctatus*, but differing from that insect in several particulars. As the species named by Schonherr, *P. Waltoni*, is synonymous with one previously described by Waterhouse and Chevlotat, I have named this Sama-Sana beetle *P. Waltonianus*, in honour of that gentleman who has devoted such minute attention to this branch of Entomology. The insect is dark, shining-black, covered with round opaque, powdery spots of a deep smalt-blue colour, and having the thorax and elytra sculptured. Found on the leaves of plants.

As our party were quietly regaling themselves with a cold collation, seated comfortably on the turfy side of a hummock near the sea, we were suddenly rocked and tumbled about in a very absurd manner by the intestinal commotion and up-heaving of an earthquake, the shock of which extended to the ship, and was distinctly felt on board.

A survey of the small island of Kumi, placed us once again among our ancient friends, the Meïa-co-shimites. Our welcome was as polite and ceremonious, the same attention was paid to our wants, and a similar active and a vigilant espionage was bestowed upon all our movements, resembling that we experienced at Pa-tchung-san. They erected rude huts as watch-houses near our tents, supplied us with mats, lent us horses, and accompanied us from village to village, in a similar manner. We found the scenery of the island in many parts very pretty and picturesque, and even in some places discovered scenes of considerable grandeur and sublimity. Along the coast we were frequently obliged to trust implicitly to the sagacity and sure-footedness of our tough little horses, which conducted us safely by many a "mauvais pas" along the edge of precipitous cliffs and overhanging rocks. The villages are most delightfully situated and often laid out with very considerable taste, the houses being neatly built, and prettily disposed among clumps of trees. In the centre of the island we were obliged to ascend on horseback a stone-road cut in a winding manner up the side of a hill, in order to obtain a favourable view of the island. About half-way up we found a beautiful clear spring shaded with trees, and in fording the tranquil pool formed by the trickling water, I noticed numbers of aquatic beetles of the genus *Cyclous* with shining, polished, pitch-black elytra, short, broad legs, formed like the flattened blades of paddles, disporting on the surface like so many gigantic whirlwigs, (*Gyrinus natator*,) those silvery-looking little insects which weave mystic mazes during the summer-time in the ponds of

Europe. Large flocks of handsome pigeons were committing depredations on the padi-fields; several elegant and showy-looking *Cetoniæ* (coleopterous insects) were flying about the grass on the summits of the hills, which were peopled moreover by thousands of those singular long-headed Orthoptera, the *Truxalis*, beautiful green *Phyllopteræ* with large, soft, leaf-like elytra, and an odd-looking *Tropidinotus*. In the evening, glow-worms were exceedingly numerous in all parts of the island. In the still, calm nights, the "diapason of the deep" lent its powers of pleasing, as the waves idly dashed against the rock-bound coast, and very soon lulled the small party, tired with their days rambling, to a sound sleep on the mats and grass laid for them on the ground.

On the 5th of August we were anchored in Nangasaki Bay, with the mountainous country covered with vegetation, surrounding us on all sides. The hills being prettily surmounted with trees, and their sides beautifully cultivated in terraces after the Chinese fashion, together with the batteries and tents for the troops on shore, and the surface of the bay swarming with imperial guard-boats, fishing craft, and pleasure boats, gave an air of great vivacity and novelty to the scene. The gentlemen of Japan were most polite and courteous in their manners, conducting themselves with refined and polished urbanity, and walking about with a solemn and respectful demeanour, putting to shame the ill-breeding of the seamen who ventured to laugh at them. When they meet one another, they close the hands, bring them together at the knees, and, bending the body, make a very graceful bow. Their curiosity and desire for information was very great.

Many among them spoke Dutch, and some a little French. They appeared to be very well acquainted with geography, and pointed out their three principal islands, (which they pronounce Kew-Sèw, Nipung, and Sikòk,) on the map with the greatest ease. Some of them seemed to be well conversant with guns and gunnery; others could even master a few words of English. When I offered an old gentleman who paid us a visit in the midshipman's berth a penknife, he said very distinctly, "I must not;" although no compunction of that nature was manifested when eatables and drinkables were in question. Those of more respectable appearance, and who were doubtless interpreters sent off as spies, were all furnished with writing materials. Their "Yahtati," or inkstands, were very compact, and similar in principal and nearly in form to the ancient Atramentaria found at Pompeii, and in use among the Greeks, with little covers to keep the dust from the ink. The Japanese, however, had the advantage over these, in being provided with a long hollow metallic handle, in which the pen was always kept in readiness. Many of these people had a debauched and debilitated look. Like the Loo-Chooans, they dress in long loose robes of various texture and colour, secured about their middle with a broad sash, in which among the upper orders two sabres are thrust.* The pattern of their robes is very various, blue being the chief and favourite colour; some however are light black, some buff colour, some chequered black and white, some striped, others flowered, many quite plain, some marked with characters on the back, others with various circles and mysterious hieroglyphic devices, each doubtless having a meaning as denoting the rank of the wearer, or his office; but to us they were quite unintelligible. Unlike the Loo-Chooans, however, over this flowing garment, which extends as low down as the ankles, the Japanese wear a large loose jacket, with very wide sleeves, which reaches as far as the knees. Like those of Loo-Choo, their feet are protected with sandals, neatly made of plaited rice-grass, and their socks either black, dark blue, or white, have a separate compartment for the great toe, like the Mandarins of Napa. Like these latter they go bare-headed, carry their short pipes in a neat case, and use paper pocket-handkerchiefs. Some of the soldiers wore tight pantaloons and gaiters.

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* See Frontispiece.

In their gait, from the constant practice of wearing sandals, they are slouching and awkward. The head is shaved from the front to the nape of the neck, the hair on the sides is strained upwards, tied at the top, and the ends of the hairs glued together by grease or wax, forming what they call a "Kami," which is tied in two places with silver wire, and brought forward on the bald crown, thus differing somewhat from the "Kotuxa" of Loo-Choo, where the hair is secured in a knot. They shave the cheek and chin, differing also in this particular from the people of Loo-Choo. The boatmen and lower orders are nearly naked. They were treated with disdain by most of the higher classes, who would not allow them to come on board. These men are very active and strong, and of a much browner complexion than the better classes, many of whom are almost white. The deep, oblong, sunken eye of China is common among these men, although I have seen some with eyes nearly as full as those of Europeans.

They all evinced a great repugnance to having their scimitars withdrawn from their sheaths, and showed great aversion when questioned about the operation of ripping up the belly in cases of honourable suicide, but intimated that the short straight sword was the one employed, and the long curved one for fighting. The blades of these weapons were highly tempered, keen-edged, and beautifully wrought with figures. The sheaths, in numerous instances, were very splendid. Some were of black polished lacquer, with gold figures inlaid; others of shagreen, and others covered with various devices in silver; the guards were ornamented in an equally chaste and tasteful manner. They wear the sharp edge upwards, the reverse of most other nations. On the whole, they appear from all accounts to be more upright, honourable, and at the same time more jealous than the Chinese, more refined and civilised than the Koreans, and more warlike and intellectual than the Loo-Chooans. Many of the arts and sciences have arrived at considerable excellence among them, more particularly those of an imitative character; their manners are softened and polished to the utmost degree of refinement; and at the same, if Titsingh and others are to be believed, their morals are at a very low ebb indeed.

Although surrounded by the imperial guard-boats, which watched all our movements with a jealous vigilance, numbers of interesting shells were procured from a muddy bottom, at about eight fathoms water, by dredging under the stern and in the ship, both coming in and going out of the bay. Among these were species of *Nucula, Pandora, Myadora, Arca, Neæra, Anatina, Mya*, and *Cardium*, obtained in the living state; and *Balanus*, *Venus*, *Pullastra*, *Tellina*, *Pecten*, *Ostræa*, *Modiolus*, and *Lima*, in a dead state. Among the univalves which were obtained in a living condition, were *Pleurotoma*, *Clavatula*, *Cancellaria*, *Terebra*, *Murex*, and *Nassa*; and dead species of *Cylichna*, *Natica*, *Mitra*, *Dolium*, *Bullæa*, *Terebellum*, *Turritella*, and *Dentalium*. Altogether the dredge furnished us with thirty-two genera, and numerous species of Mollusks, besides *Spatangus*, *Asterias*, *Leucosia*, *Matuta*, *Echinus*, and *Sipunculus*.

On our passage from Nangasaki to Loo-Choo, we sailed through a small archipelago comparatively unknown, and consisting of from fifteen to twenty conical islands, all of them evidently being the tops of a sunken chain of volcanic mountains, some of them still in an active state of eruption, vomiting forth smoke in large volumes, from terminal craters or fissures in the sides. These submarine mountains must be very steep and lofty, for quite close to the shore no bottom was found with two hundred fathoms of line. On one islet, named "Disaster," on account of the upsetting of the Captain's gig and loss of numerous valuable instruments, hundreds of the amphibious *Bulla viridis* of Rang, or *B. calyculata* of Sowerby, were discovered crawling on the surface of the rock, a little way removed from the dashing of the waves. On some few of these sterile meteoric islands goats were seen hanging from the flanks and browsing on the scanty herbage; and these, mixed with a few Sweet-potatoes, would seem to constitute the food of a few poor miserable wretches of the human species, who have most probably been banished to these inhospitable shores from Japan or Loo-Choo, and who here contrive to maintain a precarious existence on roots and goats'-flesh. They are not, however, sufficiently versed in geologic lore to understand on what ticklish ground they tread, or that they stand a chance of being one day either burnt or drowned.

The Mollusk that constructs the shell of *Bulla viridis*, Rang, would appear to form the type of a new genus, which may be thus characterised. *Smaragdinella :* body oval, and somewhat depressed; lateral lobes moderate, reflexed, covering a small portion of the sides of the shell, opened and produced in front, and rounded posteriorly where they are continuous with the foot; foot moderate, rounded before and behind; head-disc five-sided, narrow and notched behind, rather broader on each side in front, flattish above, with two small tubercular tentacles in front of the central eyes, which are round, black, sessile, and placed rather wide apart. Shell partly external and naked above, with the body whorl turned inwards, open, and forming a very peculiar, shallow, cup-shaped process, which renders it quite different from other *Bullidæ.*

The animal of *Bulla viridis* of Rang, or the *Bulla calyculata* of Sowerby, is figured in the Voyage of the Astrolabe (t. 26, f. 13.) In that figure are correctly represented the peculiar prolongation of the lateral lobes forwards, the square-shaped cephalic disc, and the two round sessile eyes; but in the animals I examined there were observed the rudiments of two tentacular processes, situated anterior to the eyes. The head-disc in this genus, as in other *Bullidæ,* occasionally assumes various forms according to the will of the animal, being either deeply indented in front with lateral sharp projecting angular processes, or rounded lobes, or very much produced in front, forming an elongated finger-shaped process, which it employs as an exploring organ. The lateral lobes in like manner may vary in their outline, tapering in front to form on either side a salient angle which curves outwards, or a portion of the thin margin, which partially overlaps the shell, is produced into a rounded lobe or process; the two lateral lobes are continuous behind, and may extend much more beyond the shell and posterior lobe than is represented in M. Rang's figure. The *Bulla smaragdina* of Lewkart, which is formed into a genus by Ehrenberg, under the name of *Cryptocephalus olivaceus* (Symbolæ physicæ Mollusc Tab. 1, f. 4), is totally distinct from *Smaragdinella viridis*. *Smaragdinella* is amphibious and entirely marine, crawling slowly on rocks immediately above the ripple of the sea. The animal of *Smarag. viridis* is dark olive-green, speckled and mottled with a yet darker shade; the margins of the foot, those of the lateral lobes, and of the head-disc are of a lighter green; and the eyes are black.

CHAPTER IX.

BORNEO.

Indian Butterfly-flower—Mangrove, Casuarina, and other trees—Bird-catching plant — Curious Tree-louse — Nidification of Pigeons—New Bulimus—Wasps' and Ants' nests—Borneon Mammifera—Haunts of Molluscous animals—Their Habits—Localities of certain fresh-water species—Habits of Crustaceans—Singular larvæ—Instincts and varied forms of Spiders—Visit Kabatuan—Muda Mohammed—The Dusuns—Molluscous animals.

In the course of our survey of the north-west coast of Borneo, including Abai, the river of which is said to communicate with the waters of Kini Balu lake; Tampassook, the noted haunt of Illañon pirates; Kabatuan, which has the brother of Muda Hassim for Rajah; and Ambong, peopled chiefly by Bajows or sea-gipsies, we obtained several interesting forms, more particularly from that southern portion of the Chinese Sea, which washes this part of the Borneon coast.

Balambangan is a very flat and most unwholesome looking island, covered in a great part of its extent with Mangroves and Casuarinas, and in parts, where fresh-water pools occur, overrun with pitcher-plants (*Nepenthes destillatoria*). The *Phalænopsis amabilis* or Indian Butterfly plant, at the time of our visit, was in full flower.

This lovely epiphyte, which is considered one of the choicest and most splendid of the Orchidaceous family, grows in thick clustering masses, on the bark of the trees; and I have seen as many as twenty-five large white satiny blossoms on a single raceme, constituting a most gorgeous floral plume, and, contrasting with the dark-green foliage over which it hangs, forming one of the most lovely objects in the world of plants. Large tracts of the island are fringed with Casuarina trees of rather small dimensions, but I am unable to say of what species.

The *Casuarina equisetifolia* sufficiently indicates the peculiar appearance of the foliage of those showy-looking feathery trees that are usually seen stretching along many parts of the coast of Borneo, more particularly in the vicinity of the mouths of rivers where the ground lies low. These trees are diœcious, and produce small woody cones, which, together with their horsetail-like leaves, remind one of pine-trees, and may perhaps be considered the representatives of the *Coniferæ* in tropical regions.

Another tree, the name of which so repeatedly occurs in the pages of travellers, is the Mangrove, which renders hundreds of miles uninhabitable by man. There are two species of Mangrove common in Borneo: one of which, the *Rhizophora Gymnorhiza,* is a very tall and handsome tree, with leathery leaves growing in radiated tufts at the ends of the branches; and with very singular-shaped elongated fruit, which falls down into the mud, where it sticks with its sharp point buried, and thus becomes a young tree. I have seen many acres covered with these strange pointed young Mangroves, in every stage of development. The roots of this kind of *Rhizophora* appear above the ground, giving the specific name of *Gymnorhiza* to the tree; those of a single individual sometimes extend in a complicated series of loops and arches over a considerable space of ground, offering secure retreats for myriads of *Gelasimi*, jumping fish, mosquitoes, and other animals that love to frequent the low swampy banks of rivers. This species ordinarily affects fresh water; but near the sea, and often fringing the low islets that extend along the coast in many parts is another kind, the *Rhizophora Mangle*, which is a much lower tree, with smaller leaves and a fruit differently shaped, which by means of its twisted matted roots forms excellent break-waters, binding together the loose soil and shingle, and thus effectually preventing the encroachments of the sea among these low islands.

The *Aquilaria Agallocha* is one of the most common trees in the forests skirting the sea. It is a very large showy-looking tree, with the veins of the oval polished leaves running from the mid-rib to the margin, like those of some Endogens, so that there can be no difficulty in distinguishing it. The wood is frequently used by the Chinese, but is not very durable; it yields the Lignum Aloes of commerce, and has faint medicinal qualities.* Another very common plant is the *Coculus cordifolius*, with its long filiform pendent stems, which hang suspended from the tops of the high forest-trees, producing a singular effect when they are numerous. The Malays employ some of the species of the genus *Coculus* in the cure of intermittent fever, and it is said with much benefit. The *Coculus Indicus* of commerce, the seeds of which are used to adulterate beer, belongs to quite a different genus, the *Anamirta*. I have frequently collected berries which leave almost an indelible yellow stain on the fingers, and have no doubt many valuable vegetable dyes yet remain to be discovered in Borneo. The men frequently, during watering and wooding, stained their hands with a yellow sap, perhaps that of the *Terminalia Chebula*. The smooth, black, shining nuts of the *Semecarpus Anacardium*, yield a juice which produces an indelible stain, and forms much better marking ink than the caustic usually employed for that purpose.

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* The Agila wood, the produce of this tree, enters extensively into the composition of the Joss-sticks employed by the Chinese in their religious ceremonies.

At Pulo Tiga, Sir Edward Belcher discovered a species of *Pisonia*, a plant remarkable for having the perianth surrounding the fruit covered with hooks and viscid glands, and the inflorescence being in loose pannicles and covering the tops of large bushes, birds frequently become involved among the branches, and while feeding on the fruit get caught by the sharp recurved hooks, assisted by the viscid secretion which acts like birdlime. Many old forest-trees in Borneo, where the soil is superficial, unable to sustain the weight of their wide-spread leafy crowns, and deprived of that sheet-anchor the tap-root, throw out strong butresses from their sides in the shape of wing-shaped masses, which extend in various directions, and maintain the perpendicularity of the trunks. Crawling slowly on the leaves in the forest of Balambangan, is found a very remarkable form of *Acarides*, allied in many respects to the genus *Ixodes*. It is about half an inch in length; the back is covered with rounded elevations very symmetrically disposed, and nearly concealed by a mealy efflorescence, which when rubbed off, leaves the surface smooth and of a light red-brown; the under surface is smooth, and of a pale brown; the legs are very short, and the eyes are invisible. A remarkable form of Arachnidans, a species of *Macrocheles,* with a hard flat body, of a reddish-brown colour, with a straw-coloured head, is also to be met with on this island.

On the 21st of March, 1846, the day on which we received orders for England, I landed on a small islet between Banguey, or more properly Banggi, and Balambangan. The ground was partially clear among the trees, and studded with a very elegant species of *Pandanus,* on the crown-shaped bunches of the leaves of which, numbers of large blue Pigeons had built their nests, consisting of a mass of leaves and earth, rudely put together. Each nest contained two large, oval, milk-white eggs, and I observed that the young ones sometimes tumbled over the edge of the platform, which performed the office of cradle, and that the old birds did not seem to have the power or sagacity to pick them up again. I noticed the mother of one of these unfortunate outcasts, tenderly caressing and offering it food, while, in other parts, several callow nurslings were lying dead upon the ground. All day the adult birds remain concealed among the dense clouds of foliage, high up above their nests in the Pandanus trees, while their monotonous cooing serves as a lullaby to their little ones; but towards the cool of the evening, these Pigeons take their departure in large flocks, and proceed direct to the forests of Banguey, whence they return with their crops distended with green berries, and other fruits, among which I noticed young Guavas and the wild nutmeg.

Arboreal *Cyclostomata*, of elegant form, and covered with delicate markings, were observed crawling on the long Pandanus leaves; a small, flat, yellow *Helicina* was found adhering to their under surface; and a single specimen of *Nanina* was obtained. A tree, partially cut through at the base with axes, fell upon one of the carpenters wooding on the island, and besides depriving him at the time of sensation, inflicted a severe wound on the temple. What proved a misfortune to the man, however, presented to science a new and very beautiful species of *Bulimus*, which I discovered in considerable numbers, adhering to the foliage of the prostrate tree. This species, which has been named *Bulimus Adamsii* by Mr. Lovell Reeve, is of a pale yellow, with the base of the columellar lip of a violet colour, a chain of oval spots of the same colour winding round the convexity of the body whorl, and running between the convolutions of the spire as far as the apex; the shell is reversed, and the markings vary in almost every individual, some being nearly covered with spots, and others being entirely of a pale straw colour.

Naninæ are very lively animals, living high up among the foliage of the trees; they have the cloak produced in front and divided into two rounded lobes, and the posterior extremity of the foot truncated and provided with a remarkable gland. There are four tentacles, and the well developed eyes are placed at the extremities of the longest pair. Extending along the lower margin of the foot, is a singular border formed of deep vertical striæ; the posterior part of the foot is marked with straight lines directed backwards, while the anterior is finely tesselated as in the bodies of common snails. Under the name of *Vitrina,* Quoy (Voy. Astrol. t. 2, fig. 1, 2, 8, 5, 16,) has given several figures of this genus, which was established by Mr. Gray. The species observed by me was of a pinkish-white colour, and brownish-red towards the anterior part and end of the tail. The animal, like the shell, was very delicate and semipellucid. The shell was faint flesh colour, with a crimson stripe following the suture of the body whorl.

Attached sideways, by a slender peduncle, to the under surface of the long leaves of the Pandanus trees, with which as I have said the interior of this pretty little islet abounded, were numbers of wasps'-nests, belonging to a species of *Polistes,* and beautifully fashioned of a paper-like material. They consisted of several tiers of cells of the usual hexagonal form, with their mouths directed downwards and to one side, and increasing in number as they receded from the point of attachment, thus rendering the nests of a conical shape. In each cell reposed a fat white larva, somewhat doubled up, with its head downwards, and to one side. Some of the cells were covered with a lid and were full of honey, but whether the larvæ could get at it appeared to me somewhat problematical, unless their careful mothers fed them, like sparrows and pigeons do their little ones. I noticed two kinds of ants'-nests on the island, one species of the size of a man's hand adhering to the trunk of trees, resembled, when cut through, a section of the lungs; the other was composed of small withered bits of sticks and leaves, heaped up in the axils of branches, somewhat in the form of flattened cylinders and compressed cones.

As might naturally be expected from the circumstance of the island comprising the vast chain of the Oriental Archipelago lying within the tropics, the equinoctial line extending nearly through the centre, the animals peculiar to the entire group partake of a certain uniformity of character; many islands having, however, certain well marked varieties of animals peculiar to their own Fauna. Borneo, like the other islands, may be said to bear the same relation in its animal and vegetable productions to India, as the West Indian Islands do to America; but Borneo, occupying a more central position between the zoological regions of Hindostan and Malacca on the one hand, and of Australia on the other, has more large quadrupeds than New Guinea, but at the same time fewer forms which are peculiar to the Australian Fauna. The Dutch, however, have ascertained the existence of several species of those anomalous mammals, the Tree Kangaroos (*Dendrolegus*) in Borneo, the Pteromys will represent Petaurista, and I have seen a small Gerbil which might represent the Kangaroos on the one hand, and the *Gerbillus Indicus* on the part of Hindostan. Herds of Elephants are stated to tramp the vast unexplored forests of the promontory of Unsang, although during our visits to that part of the coast no traces of those huge Pachyderms were reported to have been seen; but as the Elephant has been found in Sumatra, and as the Indian Tapir exists in Borneo, the probability is that the Elephant may some day be discovered. The researches of Messrs. Diard, Korthals, and Müller, have ascertained the existence of a species of Rhinoceros, but it is uncertain whether it belongs to the two-horned species of Sumatra, or the one-horned species found in Java; the Leopard of Borneo appears to be the *Felis macrocelis*, although the existence of a much larger carnivorous quadruped may be inferred from the long sharp canine teeth worn in the ears of the Orang Sagai, and which appeared to me to have belonged to an animal nearly as large as the Royal Tiger, a variety of which, indeed, is found both in Java and Sumatra. The Dyaks, in explaining their mode of killing this tiger by surrounding him in great numbers, and then shooting him with sumpits or poisoned arrows, described him as being large and fierce, and living among the mountains. Mr. Brooke has ascertained the existence of three species of Orang Utans in Borneo; namely, the *Simia Wurmbii* or Mias Pappan, the *Simia Morio* or the Mias Kassar, and the Mias Rambi, which he states is either the *Simia Abelii*, or a fourth species; he observes, moreover, that "the existence of the Sumatran Orang in Borneo is by no means impossible." The Wou-Wou of Borneo is of a darker colour than the Javanese species, and has been named *Hylobates concolor* or *H. Harlanii*; it is represented in India by the Great Gibbon or *Hylobates albimanus*. Among other quadrumanous animals peculiar to this great island, may be mentioned the *Semnopithecus nasicus* or Proboscis Monkey, the *Semn. auratus* and *Semn. cristatus*, and the *Inuus nemestrinus;* Borneo swarms, however, with monkeys, among which doubtless are many undescribed species. The *Tarsius* or the *Didelphis macrotarsus* of Gmelin, is an inhabitant of this island, thereby connecting it to the Fauna of the Moluccas; and *Sciurus bicolor*, *S. nigrovittatus*, *S.*

exilis, and *S. melanotis*, together with several kinds of *Tupaias* are also found. At the northern extremity we observed large numbers of a great deer which came down to drink at the pools of brackish water that abound there, most probably identical with the *Cervus hippelaphus* of Cuvier, which is also found in India; the Antelopes of that continent are represented by the Pigmy Musk, (*Moschus Javanicus*,) a diminutive and graceful little animal, which bears the same relation to the poetry of Malayan Asia, as the Gazelle does to that of Persia and Arabia. The Bovine races which inhabit India. as the *Bos frontalis* or Gaour, and the Arni or wild Buffalo of Hindostan, are represented in Borneo by herds of wild cattle, which so far as I could make them out at Point Sampang Mengayu, where they are very numerous, have short curved horns, long legs, small dewlaps, and a straight back; the domestic Ox which I have also seen is perfectly different, and owes its descent most probably from the Zebu, as the wild one does from the Arni. That striking resemblances can be made between the Faunas, not of northern or central Asia, but of Hindostan and Malacca, is not to be very much wondered at, when we consider that the chain of the Great Indian Archipelago is nothing more than a long, curved, disjointed mass of land broken by volcanic force from the south-eastern portion of the Asiatic continent, and separated merely by the superficial waters of the China Sea. The breed of small and wolf-like dogs employed by the Dyaks in hunting the boar, are stated to occur in a wild state, thus representing the Dingo of Australia, and the *Canis rutilans*, or Wild-dog of the Mountains of Asia. Sumatra has a wild dog, the *Canis Sumatranus,* as has likewise Java, *Canis Javanicus;* the Borneon variety may in like manner be termed *Canis Borneoensis.* The *Viverra zibetha, Paradoxurus typus, Sus barbatus,* and the *Cercopithecus cynomolgus* may also be enumerated among the Mammalia of this vast island, and the list might easily be extended. The *Stenops tardigradus* is possibly represented in Asia by the Slow Lemur of Bengal; the *Sciurus bicolor* is also found in India, and the same may be said of the *Pteropi,* Ichneumons, and Bats. The war-dresses of the Sagai Dyaks consisted in numerous instances of the dried skins of large Felinæ, on the ears of many of which I observed tufts of hair like those of a lynx. At Kabatuan some of the women wore necklaces or amulets, formed of the scales of the Pangolin or *Manis pentadactyla,* which in India is represented by *Manis crassicaudata;* the *Helarctos Malayanus,* a small Bear, is found both in Borneo and on the Malayan Peninsula. One of these animals paid us a visit at the encampment at Sarãwak, but although hotly pursued and fired at, contrived to escape unscathed into the jungle; on another occasion, I found myself face to face with an individual of the same species, which on seeing me, trotted leisurely away.

At the village of Kabatuan, I noticed a very fine specimen of the red-necked Ichneumon (*Herpestes semitorquatus*); it was quite tame in the house of one of the principal Pangerans, but although I affected to admire it exceedingly, the old gentleman did not seem inclined to part with it; and on the mountain of Serambo, the Dyaks brought us a living specimen of a beautiful little squirrel no larger than a Dormouse, the *Sciurus exilis;* it was perfectly mild and docile, but soon pined away and died.

In many parts of Borneo, Celebes, or indeed any of the islands of the Oriental Archipelago, if you wander along a portion of the coast, where from a steep and stony beach beset with rocks, a level sand-flat extends beyond for a long distance, and is bounded seaward by a barrier of coral, against which the ocean dashes with violence, and forms breakers which leap tumultuously over and fill numerous small ponds on the inner side.—if you wander along this, and observe with the curious eye of a Naturalist, you will notice various generic forms of Mollusks engaged as follows, and in something like the following order: Herbivorous Mollusks, that live upon the *Fuci* and *Algæ* covering the rocks and stones, come first; *Purpura* and *Littorina*, pretty brisk at certain times, and busy grazing as the day closes in on their sea-weed pastures on the exposed rocks, in company with Nerites with painted backs, marked and figured with every variety of pattern; while *Chiton, Murex, Doris,* and *Rissoa,* more timid and retiring, or more dull of disposition, hide under or adhere to the surface of the stones, Nature having so closely assimilated their forms, in many instances, to the stones, and their colours to the cryptogamic plants that surround them, as to make them invisible to the eyes of their enemies. To these individuals which enjoy the blessings of limited locomotion, may be added those more inert members of the great Molluscous family, *Siphonaria, Patella* and *Vermetus;* those Crustacean forms *Conia* and *Balanus,* which are fixed upon the exposed rock-masses; and *Policipes, Mytilus, Ostræa* and *Byssoarca,* which are stuck fast in the crevices, or safely anchored in clefts and anfractuosities. Succeeding these, on the level sandflat, you will notice *Natica* and the glossy Olives, partially covered by their mantles, leisurely forming burrows in the moist soft bed on which they spend their lives; gaily-coloured Volutes, and apathetic Mitres, with cloaks begrimed with dirt, crawling about with a slow deliberate motion, wherever there remains a little water; and when that is gone, and they can no longer enjoy themselves, they sink into the yielding sand, generally, if possible, choosing places where it is mixed with mud. Then come *Buccinum*, the large-footed *Bullia*, and *Nassa*, with its bifid, turned-up tail, considerably more lively than their last mentioned neighbours, of greater latitude in their progressive movements, and which form long sinuous tracks as they traverse on their foot-like bellies the loose saturated sand; *Natica* and *Oliva* excavate the surface more deeply still, and move in burrows underneath the soil; while *Venus*, *Solen*, and the light-shelled *Mactra* perforate obliquely the loose and moistened sand. At dead low water, among huge stony madrepores and branching corals that serve to form the barrier-reef and break-water to protect those Mollusks that live inside and love calm water, may be found embedded in their substance *Lithodomus* and *Pholas*, *Magilus* and *Leptoconchus*, snugly lodged in their calcareous dwellings, secure from every foe; *Haliotis* will be found clinging to loose stones, or crawling over and under them, exposed ever to the raging, roaring surf; amid the rocky beds, *Tridacna* rests secure in her stony house; *Cypræa* cowering in the deep nooks, holes, and corners, creeps forth cautiously and with care, frequently hiding under stones so rough and large, that one wonders her beautiful porcellaneous shell is not more often scratched and broken, or her tender mantle torn and bruised. Here also *Stomatia* loves to reside, crawling with deliberate pace among the branching coral trees; but polished *Stomatella* prefers the dead banks of coral débris within the reef, hunting in company with *Parmophorus.* Outside the reef, the hand-dredge will furnish you with *Marginella, Fusus, Pleurotoma, Phorus, Clavatula, Strombus, Triphoris,* and *Rostellaria,* the first three genera affecting, however, much shallower water than the others. In very deep water, *Terebratula* and *Cylichna, Nucula* and *Neæra,* will be met with, and reward industrious dredging with new and singular forms. In very deep, still water the shells are noticed to be very thin and delicate. We obtained a *Fusus* off the Cape in 135 fathoms and from a soft, muddy, and sandy bottom, with a very thin, light, fragile shell, and a brown epidermis, covered with hair-like appendages; and a new species of *Tricotropis* was dredged also in deep water and from a muddy bottom, in the bay of Nangasaki, Kiusu, Japan.

Although I have examined hundreds of *Cypræa tigris* in a living state, I never saw those changes of colour in the mantle of the animal noticed by Mr. Stutchberry, junior, who moreover states, that they crawl about usually exposed to the sun; while the result of my experience would lead me to believe, that they almost invariably lurk in holes of rocks or under loose stones, and among branching coral. The species of *Cypræa* vary considerably in colour, thus the animal of *Cypræa carneola* is of a beautiful red colour, with the foot and mantle covered with numerous opaque, oval, white spots; that of *C. talpa* is of a pale brownish-black, with minute whitish specks; that of *C. caput-serpentis* is of a rich green-brown; and in *C. lynx* the mantle is covered with numerous tufts of various forms, nodulous, trifid, or ending in two short processes; that of *C. Mauritania* has conical tubercles; of *C. erosa,* numerous rather long branching arborescent appendages; of *C. moneta* with but few, and those chiefly around the free upper edge of the mantle; while in some, these processes are altogether wanting. In *Cypræa annulus* the siphon is of a dirty-white colour, the tentacles orange, the eyes black, the mantle brown, covered with small dark spots, the foot white, with black reticulated markings. In *Cypræa errones* the mantle is light brown, perfectly smooth, and covered with dark brown reticulations; the foot is brown, with minute white spots; the peduncle of the eye is of a brilliant white; the head is brown; the base of the tentacles is a dull white; the tentacles beyond the eyes, light brown. In Quoy's figure (Voy. Astrol. t. 48, f. 18) of *Cypræa Isabella,* the edge of the mantle is simply lobed, and the remainder of the surface naked and void of appendages. In the animal of *C. errones* the edge of the cloak forms a continuous slightly-waved line, and the surface covering the shell is perfectly smooth, and adorned only with the delicate anastomosing lines mentioned above.

The young of *Cypræa,* when first they issue from the ovum, are provided with two membranous alar expansions, like some of the Pteropods, and a delicate hyaline, simple, spiral, flattened, ear-shaped shell, which fully confirms the observation of Professor E. Forbes, who observes, speaking of the Gasteropoda generally, that "they all commence life under the same simple form, both of shell and animal;

namely, a very simple spiral helicoid shell, and an animal furnished with two ciliated wings or lobes, by which it can swim freely through the fluid in which it is contained."* This forms the nucleus of the Cowry shell, which afterwards grows and undergoes several changes in form, gradually becoming more and more complicated until the outer lip is inverted and marked with numerous sulci. The converse of this, however, would appear to take place in other Gasteropoda, as shown in the development of Dolabella, Aplysia, and others, where the shell at first turbinated and nautiloid in shape, afterwards becomes an internal, flattened, horny plate. On placing the young Cowries in a watch-glass of sea-water, they may be seen to whirl about like the Hyalæa and Cleodora, and, like Atlanta, to adhere when fatigued to foreign bodies, not indeed by any sucking disc, but by means of the dilated expansion of their mantle. In the course of growth these fleshy expansions become entirely absorbed, and do not ultimately constitute the lobes of the mantle which embrace and partially cover the shell in the adult. It would constitute an interesting enquiry to observe the transitions in the figure of the animal and shell throughout the entire series of Molluscous groups, as I am convinced that many phases exhibited in their metamorphoses would throw new light not only on the identity of species, but on the reality of the existence of certain genera.

Rostellaria has all the habits of the *Strombidæ*, progressing by means of its powerful and elastic foot which it places under the shell in a bent position, when suddenly, by a muscular effort, it straightens that organ, and rolls and leaps over and over. It is, however, far more timid and suspicious than *Strombus,* which has a bold disdosition. On the low sandy beach, near the mouth of the Lundu River, in Borneo, dead shells of *Rostellaria rectirohsis* are numerous, but generally in a very imperfect condition. At the small fishing village of Samahrtan I inspected a large heap of these shells, which the Malays had brought together for the purpose of turning them into lime. On enquiring of these poor fishermen whether it were possible to obtain them in a living state, we were informed that they never procured them in their nets, but that they lived in deep water at a considerable distance from the shore. The animal of *Rostellaria fissa* does not differ from that of Strombus, and is of a dull brown colour, varied with lighter brown. It is, however, one of the most lively among Mollusks, jumping several inches, and throwing itself about with the most astonishing activity. It has none of the extreme timidity of the former mentioned species.

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* Edin. Phil. Journal, xxxvi. p. 326.

The perfect development of the large, fine, pedunculated eyes of *Strombus*, together with its very elongated, powerful, muscular body and foot, and claw-shaped stout, jagged, horny operculum, constitute it one of the most active and intelligent of Mollusks. It is, in fact, a most sprightly and energetic animal, and often served to amuse me by its extraordinary leaps and endeavours to escape, planting firmly its powerful narrow operculum against any resisting surface, insinuating it under the edge of its shell, and by a vigorous effort throwing itself forwards, carrying its great heavy shell with it, and rolling along in a series of jumps in a most singular and grotesque manner.

Among new and interesting forms of those Molluscous animals which are denied any calcareous defence in the form of a shell, and the breathing organs of which are consequently exposed, hence procuring them their name, *Nudibranchiata,* may be mentioned two new species of *Dendronotus,* one of which (*D. stellifer,* Adams and Reeve,) is of a pale flesh colour, marked with undulating vertical vermilion lines, freely anastomosing towards the foot, and the veil overhanging the head provided with a star-shaped tentacular appendage on either side. The other species of this curiously-shaped genus (*D. tenellus,* Adams and Reeve,) adheres like the former to floating Fuci; crawls pretty briskly, and swims, when detached, by lateral inflexions of the body. Among the *Dorididæ,* the *Polycera cornigera,* (Adams and Reeve,) is one of the most beautiful of the family, the body being of a pale straw colour, beautifully marked with bright vermilion, which covers entirely the dorsal portion, and descends in numerous vandykes towards the foot; there is a row of bright ultramarine spots on the anterior tubercle, and another row of the same colour extending across the top of the head. A species of the genus *Hexabranchus* of Ehrenberg, which I have named *H. sanguinolentus,* is also of the most lovely colours, but yet is made to yield the palm to the type of a new genus, which may be termed *Heptabranchus,* and which I have dedicated, by permission, to Sir William Burnett, the Medical Director-General of Hospitals and Fleets. The nearest approach to this peculiar form of Dorididæ (*Heptabranchus Burnettii,*) appears to be the animal named *Doris Sandwichienne* of the "Voyage de la Bonite;"* but in that Mollusk the mantle entirely covers the foot, whereas in this type the foot extends beyond the mantle and behind it in the manner of a *Goniodoris.* In the above-mentioned figures of the French Naturalists, there are eight distinct branchial tufts, but in this animal there are but seven, arranged in a semicircular manner around the projecting tubular fecal orifice, so that in these singular Mollusks, the number of tufts that constitute the branchiæ seems to vary; in the beautiful *Hexabranchus prætextus* of Ehrenberg, (Symb. Phys. Mollusc. t. 1, f. 1, 2,) the branchial tufts are six in number, and emerge from six distinct apertures around the anal orifice, which, as in *Heptabranchus,* is prominent and tubular.

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* Tom. 25, f. 1, 2.

Tropical *Assimineas* seldom or never live entirely in the water; they love to frequent the soft muddy banks of shallow ponds in shady places, or to crawl among the roots of high grass on the low swampy banks of rivers. The *Telescopium* lives among the Mangrove-roots in brackish swamps, where, in some parts of the day, the water entirely recedes and leaves the mud bare. Miles of muddy ground beyond the range of the sea at high-water mark, and kept moistened by dull trickling rivulets, are planted with thousands of the large black *Telescopium,* with their acuminated spires sticking out of the soil, while the body and head of the animal are busily engaged in seeking for food beneath the surface. The *Terebralia* of Swainson loves the water more than the *Telescopium,* and lives nearer the sea in shallow ponds, and still, warm pools, among the tangled Mangrove-roots in the society of the *Quoyia,* or *Leucostoma* of Swainson. The *Nematura* inhabits very shallow water in still and half stagnant ponds, adhering generally to the under surface of dead and decaying leaves that float suspended in the water near the margin, but sometimes I have found them crawling very slowly on the soft muddy banks, forming slender tracks, as *Nassæ* do, in crawling over the moist sand-flats near the sea. Generally speaking the *Auricula Judæ* inhabits dark, damp woods, choosing the vicinity of water, but I have, however, found them by hundreds crawling over the moist mud of the Mangrove swamps. They are blind, and appear to be most active in the evening. At Monado, in Celebes, a species of *Assiminea* covers the perpendicular banks of the river; the mud-flats left exposed during low tide are covered with thousands of *Neritinas* and *Clithons*: *Melanias*, of the long-spired division live in the mud in shallow places with the water just covering them; while Pirenas inhabit the bed of the river in rather deeper water. Some Neritinas found by me in this island, live among the foliage of tall trees, that overhang ponds and rivulets; others cling to the roots of Nepa palms and various trees near the margin; others crawl on the stones in the water; many live in deeper water, half-buried in the mud; a few in brackish water, and others again in water perfectly salt.

Off Tampassook, several *Ixas* were obtained by the dredge. They inhabit very deep water, are feeble and inactive, and were it not for the dense solid carapace, armed with strong lateral processes with sharpened points, would be very defenceless animals. Two new species of this rare and beautiful genus have been added by us to Zoology. A new species of *Parthenope*, with large eyes and the carapace ornamented with tuberculated ridges was obtained. This genus has precisely the same habits as *Lambrus, Cryptopodia,* and others, simulating death when alarmed, and retracting its members under the carapace. A new genus the *Ceratocarcinus* (Adams and White) was obtained off Balambangan in twelve fathoms of water, having the same helpless appearance and inactivity of habits, as *Parthenope* and *Lambrus.* The species (*C. longimanus,* A. and W.) is of a blood-red colour with five light bands across the carapace. The *Cosmonotus* (Adams and White), another new genus, was obtained near Unsang, on the east coast among the clear sandy pools within the reef-barrier. It has the same habits as *Hippa* and *Remipes.* The species (*C. Grayii,* A. and W.) is of a brick-dust red colour and scarlet, minutely speckled, with white legs and chelæ. The *Notopus dorsipes* has the same habits, and the *Albunea,* like the *Hippa,* seems also to prefer the still water just within coral reefs, or the small deep pools you find on steep rocky shores. Here they swim rather rapidly in straight lines from stone to stone, or from brink to brink, when they usually rest or remain quite stationary. They seem to crawl badly, but dart, like some spiders, on their prey from among the weeds, or

"Under rocks their food in jointed armour watch."

The *Zebrida,* a new genus of Mr. White and myself, was dredged in about six fathoms from the mouth of the Pantai river, on the coast of Borneo. It is a torpid, though elegant little Crustacean, having all the apathetic peculiarities of the *Lambrus* and *Parthenope.* The species

(*Z. Adamsii,* White) is of a light pink-colour with dark red-brown longitudinal stripes. It is perfectly smooth, polished, and hairless. *Lissocarcinus* and *Gonatonotus,* two other new Genera, besides numerous new species, were likewise obtained along this coast.

The Chitons, in the tropics, appear to be more vivacious than those found further north. If turned over on their backs they will gradually bend their calcareous jointed bodies in every direction, contracting and dilating their ventral disk until they assume their natural position. Their progressive motion is scarcely perceptible however, the principal object apparently being again to fix themselves to the surface of the rocks which Nature has given them to inhabit. Their food consists of Fuci and other Algæ, with which the rocks and stones are covered, and their excrement is solid, and formed like that of an insect in the larva state.

Among coral masses on this north-west coast of Borneo, a large and handsomely-marked species of *Vermetus* was found, the head of which is elongated, flattened, tapering behind, broader in front where it is divided between the tentacles into two lobes; the tentacles are compressed vertically, conical in form, with the small sessile black eyes situated at their outer bases; the mantle, with a thickened rim, forms a wide loose tubular sheath around the sub-cylindrical body; the foot is circular, but without exhibiting any of those tentacular appendages usually observed in this genus, the margin being simply thickened; the operculum is large, circular, flat, and horny, with concentric elements; and, when the animal is retracted, entirely closes the aperture of the shell. The slight development of the foot indicates the sedentary nature of the animal, whose shell is firmly embedded among the madrepores. The mantle which, in the ordinary condition, is closely applied against the walls of the shell, is covered, like the entire surface of the body, with white reticulated markings upon a rich deep chesnut-brown; while the thickened fleshy rim surrounding the foot is of a delicate pink colour.

In the woods of Tampassook, the larva of a butterfly forms a curious spherical nest out of the pinnules of a species of fern. It bends down the leaflets, and fixes them ingeniously by a glutinous thread; the grub, at the time of its incarceration, feeding on the verdant walls of the cavity. I have found another larva which inhabits the pod of a species of leguminous plant, and which, having consumed its contents, forms a cocoon in the empty siliqua. Another remarkable larva, belonging to an *Oiketicus*, or *Psyche*, of the Lepidopterous family, *Arctiidæ*, forms a very remarkable case or tent out of small dry pieces of sticks and leaves, and being thus protected, crawls about the surface of the foliage, consuming the parenchymatous tissue. One of these was marbled pale yellow and black on the head and first three segments; the rest of the body straw-coloured, with two rows of small black dots on each side above the spiracles. The case was lined with a soft, loose, cottony down, composed of minutely comminuted vegetable fibre.

The animal of M. Lovèn's genus, *Cylichna*, crawls very slowly, moving by an almost imperceptible series of undulations of the foot; it has a peculiar habit of extending the head, when a somewhat slender rounded peduncle, resembling a neck, comes into view. By this means the animal is enabled to move its head about in any direction with ease and facility; the front part of the foot is short and truncate, not elongated and dilated in front, as in *Bulla aplustre* and some others, and behind it is furnished with two flattened lateral conical processes or tubercles, a peculiarity which I have not observed in any other *Bulla;* the lateral lobes appear to be entirely wanting, and the posterior lobe is concealed within the shell, which, as in *Bulla columna,* is altogether external.

The forms of *Arachnida* are as wonderful and as varied in Borneo as in other parts of the world, but their study is exceedingly difficult, and their bodies not easily preserved. In the forests, you will often perceive large species, suspended high by a single thread to the leaves and branches of the trees, of fantastically-formed *Acrosomata,* with their flattened, painted backs, and strange spiny protuberances. I discovered at Sarāwak a very beautiful new species, which I have named *Acrosoma trivirgulata.* It is in form very near *Gasteracantha transversa, gemmata,* and *fornicata* (Koch, Tab. 113, fig. 259, 260, and 261,) but it is black, with three broad, transverse, yellow bands on the abdomen, with numerous faint annuli, and three bright yellow spots on the posterior part. The thighs are banded with yellowish-green, and the under surface is black, with bright oval yellow spots. Like many others, it was found suspended by a thread from a lofty tree, and, when taken, contracted its members and simulated death. The nests of these spiders are as extraordinary in form as the bodies of the spiders themselves, which, in numerous instances, they very much resemble.

The section of *Epeira* with lobed abdomens, named *Argyropes*, build beautiful webs in every part of the forest. Some of them are very handsome spiders, shining with gold and silver, and ornamented with elegant patterns of crimson and yellow. A species of *Phalangium*, with long legs of exceeding tenuity, may be frequently seen hanging by its feet to the under surface of leaves, and vibrating its body so rapidly, as to be at times undistinguishable to the eye. *Nephilæ* of enormous size spread their large nets very low in shady thickets, so that a man in penetrating the forest will become entangled and more annoyed by a spider's web than he will readily allow. It is a fact constantly brought before the notice of the observer, that those species of spiders that live on the bark of trees are mottled grey and brown, and those which you find upon the ground are altogether black or dingy-coloured; while those living among flowers have beautifully variegated bodies. How admirably, in these examples, is shown the fitness of things, maintained even between organisms usually deemed so abject, and the domains they owe to ever-careful Nature! It matters not much whether we say the place determines the nature of the animal, or whether the animal is adapted to the place, although perhaps it is more pleasing to an observer of nature to trace the harmonies and adaptations to an Intelligent Foresight, like the good St. Pierre, than to make them merely the necessary results of a physical arrangement of the earth's surface, like the ingenious author of the "Vestiges of the Natural History of Creation."

Not very far from Tampassook, while we were surveying a small bay, numbers of canoes came alongside for the first time during our examination of this part of the coast, and offered fowls, yams, and sweet-potatoes, in exchange for empty wine bottles, which they seemed to covet in an especial manner. These people were principally Malays, very poor, very dirty, and very ill-looking; they assured us, however, that they were good men and not pirates, and that their ruler or chief was a brother of Muda Hassim and of the unfortunate Budduruddin, and in the evening, a Pangeran arrived from the town, which he called Kabatuan, situated up a river of that name, informing the Captain that the Rajah was sick, and required medical assistance. I accordingly, with the permission of Sir Edward, took a seat in the Pangeran's canoe, and proceeded to visit the village. As we left the ship, I noticed that all the Malays took off their krisses and placed them under a mat, a proceeding, possibly, to remind me of their friendly intentions. Escorted by numerous canoes, we rapidly ascended the river to the distance of about eight miles, at which point I found, on tasting it, that it continued perfectly salt. Large and strong stakes were here thrown across the river, and suddenly turning short round, the boats entered a narrow creek concealed in the left bank, where there was only room for the passage of a single canoe at a time. Proceeding along this for some little distance, we suddenly emerged, and entered another reach of the Kabatuan, and after paddling for some time, came to shallow slimy mud-flats, the whole of the natives here getting out, and sliding their long canoes over the mud at a quick walking pace. Once more launched upon the stream, which here appeared a very deep river, particularly on the right bank, I noticed a very large war-prahu, similar to those in use among the Illaños, full of armed men, evidently preparing for some predatory expedition; several sailing prahus were likewise at anchor; and under a kedjang-shed I observed a large newly-built sailing boat, probably of twenty tons burden. How these craft came into this part of the river is to me a mystery, as the natives seemed to have brought me by one of the secret passages leading to their haunt or hiding-place. The town is situated among low jungle in a morass, with the river winding about it at a little distance from the central mass of houses. As I landed, a Pangeran took me by the hand and escorted me to his house, where, seated on an elevated platform, I was offered a cup of toddy and a long cigar, formed of tobacco rolled up in a plantain leaf, which I smoked to the evident gratification of some hundred Dusuns, who probably had never before seen a European. From this I was led across swampy ground, walking on narrow planks and across slender bamboo bridges, to a neatly-built square-shaped isolated edifice, where I was introduced to the Rajah, who, shaking me by the hand, begged me to be seated in an arm-chair by his side. After ascertaining that his Highness was suffering merely from the effects of a slight debauch, I prescribed something warm and stomachic, which I had brought with me. Mr. Brooke, who on his first arrival at Sarãwak, had an interview with this brother of Muda Hassim, describes him as "a sulky-looking, ill-favoured savage, with a debauched appearance, and wanting in the intelligence of his brother, the Rajah." Muda Mahommed is a very large man, inclined to corpulence, with a sensual countenance, and what gave him a somewhat peculiar appearance, was the circumstance of his wearing no handkerchief round his head, and his hair being cut quite short. The "Hall of Audience," as usual in these cases, was crammed with numbers of old, ugly, crafty-looking Malays, all squatting on their hams, with their faces turned upon their Chief; but peeping curiously in at the open doors and windows were numerous Dusuns, a wild tribe that inhabit the mountains of the northern parts of the island. The Rajah informed me, with some emotion, of the cruel murder of the noble-minded Budduruddin, and expressed himself in strong terms concerning the character of Pangeran Usop, and concluded by hoping that Sir Edward Belcher would proceed at once to Brunai, avenge the death of his brother, and destroy the city. He asked me, moreover, if I did not remember his younger brother to whom he presented me, and I recognised him as having formed one of the suite of Muda Hassim. Reposing in picturesque attitudes upon the ground, or leaning on their shields, and conversing in little groups around this so-called palace, were some dozen Dusuns, a handsome and prepossessing race of aboriginal Dyaks, whose name implies, according to Mr. Brooke, that they are an agricultural people, having a peculiar dialect of their own. In person, the Dusuns are about the average stature of Malays and Dyaks, that is below the height of the generality of Europeans, and their forms appeared to me very symmetrical and well-proportioned, particularly when contrasted with the large-headed, bow-legged Malays, who seemed to regard them with supreme contempt, not permitting them to enter and join in their conference. The colour of their skin struck me as being very peculiar, being of a dark, blackish, dull brown, more resembling that of the natives of some parts of Hindostan than of Malays and Dyaks in general; their countenances have a very mild, agreeable, and open expression, quite different either from the sharp cunning peculiar to the tribes of Serebus and Sekarran, or the grotesque good humour of the wild, broad-faced Orang Sagai; their eyes are large, clear, and expressive; their noses straight and prominent, but having the alæ considerably developed; and their mouths well formed, and not too large; their teeth are filed straight, concave externally, and stained black. In those I saw, the hair was worn long behind, and flowing down the back, cut straight in front across the forehead, and confined by a single fillet of white bark-cloth. I did not observe that the bodies of any among them were tattooed. The most extraordinary peculiarity, however, about these *indigines*, was the circumstance of their thighs, and loins, in particular, being encircled by great numbers of thick, bright, polished, wire rings, which rattled as they moved, and gave them a very singular appearance. Similar rings depended from the lobes of their ears, and were worn around their necks. They carried large shields, formed of wood, and ornamented with tufts of hair, and were armed with sumpitan and parang.

CHAPTER X.

MAURITIUS TO ENGLAND.

Scenery and Vegetation of Mauritius—Æstivation of Tropical Mollusca—Great Indian Tortoise—Habits of the Dolabella—Singular species of Bullæa—St. Brandon Shoals—The Cocoa-nut—Aspect of the reef and islets — Sea-birds — Their habits and nidification — Instinct in Fish—Animal of Ancillaria—Pelagic skeleton Crustacea—Anomalous Zoæas—Cypridina Adamsii—Habits of Janthina——The Carinaria and Atlanta—The Hyalæa and Cleodora—The habits and development of the Argonaut—Insects at Sea—Concluding Remarks.

Mauritius, so famous for its mountain of Peter Bott, so immortalised by the sweet tale of Paul and Virginia, and so interesting to Zoologists in being the probable birth-place of that monstrous extinct pigeon, the Dodo, is certainly a very beautiful island, abounding in scenery of the most varied and delightful description, any attempt to expatiate upon which, after St. Pierre's glowing pictures, would be presumptuous. To fully enjoy his exquisite little narrative, one should make a sentimental pilgrimage, and wander from the Shaddock Grove to the river of Fan-palms, from Cape Misfortune to the Alley of Bamboos, and from the Pass of Saint Geran to the bay of the Tomb, and what one misses in sentiment, might be gained in contemplating the sweet scenery of the island. No wonder such a charming spot should have changed names and masters so often, with such advantages in climate, situation, and productiveness. It has been called Swan Island by the Portuguese, Mauritius by the Dutch, and Isle of France by "La Grande Nation," for each has held it in rotation, and now the British Lion's paw is on it. In the general character of its vegetation, Mauritius is somewhat similar to that of the Cape in the number of succulent plants, Cactuses, Spurges, Aloes, House-leeks, Fig-marigolds, &c. Many plants from Europe, Africa, Madagascar, and India are acclimated, and flourish well. Among others I noticed the *Cycas circinalis, Chrysanthemum Indicum,* and the *Argemone Mexicana,* which notwithstanding its name, is very common, and when in flower, its large yellow petals and glaucous prickly leaves have a very pretty appearance. Shady groves of Mango and dense masses of *Mimosa* are met with, in short, nearly every beautiful tree of the tropics. While staying at Port Louis, I accompanied Sir Edward Belcher and Sir David Barclay some miles into the interior, and spent a very delightful day at Sir David's country house, a pleasant villa situated half-way up a mountain, and surrounded with beautiful grounds. Numbers of flowers, natives both of India and Europe, flourished luxuriantly in the garden; the dry, prickly-leaved Euphorbia of Madagascar, with the succulent-leaved Mesembryanthemums of the African coast; the sweet Rose of Persia, with the wild flowers peculiar to the island. The Heliotrope in dense masses, and the sweet-scented Verbena in hedges, were contrasted with Mimosas, Cassias, and Palm-trees. A stream of clear water from the mountains ran through a channel, and filled tanks in various parts where numerous Physas, Succineas, and Water-beetles were observed. In the wilderness at the back of the villa, fine oaks formed natural summer-houses, and groups of large trees, natives of the Mauritius, were mingled with the Gourd and Coffee-tree. In the holes of tree trunks, and under the decayed mass of leaves which strewed the ground, we found numbers of a large *Achatina* in a state of hibernation. The large *Achatina* of the Mauritius, during æstivation, forms a strong, dense white epiphragma during the dry season, and conceals itself either in holes of decayed trees or under the surface of the soil ; the *Megalomastoma* of Mindoro closes its shell with its round horny operculum, and congregates in numbers in fissures of trees some distance from the ground; the *Cerithium truncatum*, in Singapore and Borneo, suspends itself by glutinous threads to dead sticks on the margins of rivers; the *Caracolla* of the Philippines, hides under loose bark, where it adheres very closely; the *Cyclostomata* and *Scarabi* bury themselves under the stratum of dead leaves with which the ground is always covered; the *Assimineæ, Melaniæ,* and *Ampullariæ,* conceal themselves in the soft mud of ponds and rivers; the *Nematura* adheres firmly to floating sticks, and to the under surface of leaves in stagnant pools; the snails glue themselves together, as they do in England, and congregate in holes of rotten trunks; the *Bulimi* adhere firmly to smooth branches and boles of trees; and the *Helicinæ* to the under surface of leaves generally in an elevated situation. The *Potomis* and *Telescopium* bury themselves in the muddy Mangrove swamps, many *Neritinæ* do the same thing, and I have noticed in the island of Basilan a dark-brown species of *Conohelix*, which conceals itself also in the soft mud, several inches below the surface, among the roots of the *Rhizophora Mangle* above high-water mark.

Man is not the only animal which has wandered by chance or inclination from the old to the new world. The great black Indian Tortoise, originally a native of Madagascar and the Mauritius, is identical with that species whose habits have been so admirably alluded to by Mr. Charles Darwin, who describes it as inhabiting the low islands of the Galapagos Archipelago. It is likewise found in California, and I believe has been met with in other parts of the west coast of South America. A gigantic specimen of this Tortoise made a voyage to England in the 'Samarang,' but unfortunately died shortly after its arrival, in consequence, probably, of injuries received during a gale in the Bay of Biscay.

The *Dolabellæ* seem to love the still and rather shallow water of creeks near the sea, where they congregate under large stones, and in deeper water remain fixed by their ventral disks to the surfaces and sides of submerged rocks, in a collapsed and motionless state. They prefer a gravelly or stony bottom, and at the rising of the tide I have seen them crawl pretty briskly towards the shore, when they proceed to the small shallow pools to feed upon the sea-weed that abounds there. Having instructed the boat's crew where to find the animal, and its appearance, they waded up to their waists and soon returned with considerable numbers of very large specimens which were all deposited in a pool together, so that I had ample opopportunities of drawing and observing them.

In a remarkable form of *Bullæa*, found on the shores of this island, the anterior lobe or cephalic disk is entirely destitute of eyes or tentacular appendages; it is thin, broad, flattened, dilated in front, on the same plane as the foot, and continuous on either side with the lateral lobes; posteriorly where it joins the posterior lobe, it is deeply indented, as in most *Bullidæ*. The lateral lobes, large, extended, and fitted for natation, partially overlap the posterior lobe, are on the same plane with the foot, continuous in front with the indistinct head, and end behind in a broad, truncated border, which is notched in the centre. The posterior lobe which lodges the shell, and contains the viscera, is rounded above, partly enveloped by the lateral lobes, and slightly notched behind.

L'île Saint-Brande, situated to the north-east of Rodriguez, called the Saint-Brandon Shoals by the English, and Cargados Garajos by the Portuguese, has derived a few cocoa-nut trees from the latter island, which in its turn obtained them from the Mauritius, according to St. Pierre, who relates that when the philosopher François Seguat and his unfortunate companions, formed in 1690 the first inhabitants of that little island, there were no cocoa-nut trees on their arrival; but as if Providence had invited them to remain there and cultivate it, the useful and agreeable present of several germinating cocoanuts was thrown ashore by the waves. He observes, moreover, that these two islands although situated in the course of a current, which, during the year, runs alternately, six months towards one and six months towards the other, had not communicated all the plants peculiar to each. In the course of time all the small, scattered islets of this extensive shoal will become united, and constitute one large island covered with cocoa-nut trees. Well then, may we exclaim with Mr. Crawfurd when speaking of that vegetable blessing, the cocoa-nut: "How wonderful to discover this useful plant silently propagated over many thousand leagues, among hundreds of barbarous tribes of dissimilar languages, whose very names and situations are unknown to each other!" How extremely fortunate is the curious fact that the cocoa-nut should grow the easiest, and thrive the most luxuriantly, always near the sea coast, and with what pains has Nature, to ensure a safe passage to the tender embryo, encased it in a strong thick husk that will remain uninjured when dashed upon the shore by the billows!

The general aspect of these small islets, thus formed out of a huge reef in the middle of the ocean, is by no means inviting. It is a wild and barren scene. The soil is sand, and ornamented only by a few stunted shrubs; the sullen ocean roars in the distance, and breaks over the barren reef, and upon the beaches of the islands, in vast rolling surges, while screaming all around, flocks of snow-white tern, and long-winged gulls hover over the water, or cover the bare ground as they sit brooding over their eggs.

On some of the low islets you could not walk without crushing the marbled eggs, or treading on the callow young, of Tern, Petrels. and Noddies. One species of *Puffinus*, allied to *P. fuliginosa*, sleeps, by day, in burrows formed by its feet in the sand, at the bottom of which it deposits a milk-white egg, as large as a duck's. It frequents the centre of the islands, and howls most dismally all night long, making a mournful noise, like the cooings of doves, mingled with the wailings of the Chacal. A beautiful *Sterna,* black above and white beneath, also lays a mottled egg in the middle of the islands, about two feet apart, on the bare ground. The female sits on the egg and defends it stoutly. The young are spotted white and brown, and run like little Partridges.

Another large, dark, ash-coloured species frequents the vicinity of the sea, and lays a large, oval, white egg, among the loose stones, near the shore. The young are sometimes white, sometimes grey, and often black.

Another *Sterna* of smaller size, dark ash-coloured, with a lighter coloured head, builds in the middle of the islands, among the low bushes, constructing a rude kind of nest of straw and leaves, forming a sort of platform. It deposits one mottled egg, the size of a Pigeon's. The young are grey or whitish. A small white species lays a single egg (mottled and marbled,) close to the water's edge, on a flat stone, quite exposed and unprotected. The young are snowy-white, though occasionally greyish. With all this incubation going on around, I could not help thinking of Milton's description of a somewhat similar scene, where he alludes to the birds in his "Paradise Lost,"

> " Hatching their numerous brood from th' egg, that soon,
> Bursting with kindly rupture, forth disclos'd
> Their callow young, but feathered soon, and fledge,
> They summ'd their pens, and soaring th' air sublime,
> With clang despised the ground, under a cloud
> In prospect."

The Saint Brandon Shoals, abound with fish of every description, which afforded a rich treat to the ship's company, who caught them in large numbers, alongside.

Among others, I noticed Pomfret, Rock-cod, a species of *Gadus*, of a splendid red, covered with round ultramarine spots; the handsome *Diploprion bifasciatum*, a small species of Tunny, a *Pelamis* with transverse green bands, several kinds of Sharks, the *Serranus hexagonatus*, and a splendid *Serranus* of a chrome yellow, with broad blackish bands. Snappers, marked with blue and yellow, and with silvery bodies, and several species of *Pelamis, Poropsis, Lethrinus, Chætodon, Balistes, Chrysophris*, and *Mugil*.

Saint Pierre, after alluding to the cunning of certain flat fish which bury their large fins in the sand, and show only their cheating side when the tide has receded, and left them to await patiently its flowing, and thus elude the notice of the fishermen, makes the following remark with much glee: "C'est ce que je leur ai vu faire plus d'une fois, encore plus émerveillé de la ruse de ces poissons, que de celle des pêcheurs." The large Ray, which was captured on the Saint Brandon Shoals after a hard struggle, was of a bluish sand colour, and its back studded with white tubercles, thus resembling very much in appearance the bottom of the sandy coral patch on which it lived; and a Skate pursued by a boat's crew over a muddy flat in very shallow water at Basilan, was of a dirty yellow brown, precisely the same colour as the place it was accustomed to inhabit. I have noticed that among low coral reefs where *Pleuronectes* are frequently found, their tails are often ornamented with rather vivid colours, and their upper sides marked with somewhat striking patterns, whereas those that are half buried, as for instance in Manilla Bay, are as dull and dingy, as the surface in which they are found.

The nature of the animal of *Ancillaria* appears to be not very well understood. M. Rang observes: " Animal furnished with a lobe of the mantle covering the shell, in other respects unknown." (Manuel de Mollusques, p. 227.) Mr. Gray, founding his opinion on the figures of M. Quoy, observes: " The shell is nearly sunk in the very large expanded foot of the animal, which is deeply cut in on each side in front. The siphon alone is exserted." It appeared to me, however, when examining these animals, numerous living specimens of which were dredged by us on the east coast of Africa, that the lateral lobes or processes which partially envelope the shell, are precisely analogous to those of the *Bulla*, and are as much entitled to be called the mantle, as are the loose expanded lateral folds which cross upon the back of the *Aplysia.* These alar expansions of the mantle are enormously dilated, the right one is generally longer than the left posteriorly, and both curl upwards and inwards during the ordinary progression of the animal, and folding themselves on the shell, almost entirely conceal it from view. At the anterior part, they are in close juxta-position, in the middle they slightly overlap each other, and posteriorly they are rounded and open, and projecting beyond the spire, form a loose, open sac. Anteriorly, the foot is produced, as in *Natica* and *Bulla*, forming a cephalic disc, which however is divided by a deep furrow or groove into two triangular lobes, and separated from the lateral portions of the foot by deep lateral clefts or fissures; behind, the foot is slightly cleft or bilobate, and below, it is furnished with a furrow in the median line, and is smooth, wide, and provided with a slimy, mucous secretion, another peculiarity in which it resembles *Bulla.* I have no doubt, moreover, that occasionally the lateral membranous expansions are horizontally extended, and that the animal is enabled to swim in the same manner, as I have mentioned, as peculiar to some of the *Bulla* tribe. The *Ancillariæ* crawl with a sliding motion, and with considerable celerity. As they glide briskly along, the tubular cylindrical siphon only is visible. It is directed backwards and upwards, and sometimes is laid flat on the back of the animal; while the two triangular lobes placed anterior to the foot, are extended laterally, and in front moving about and exploring the ground like tentacles, and no doubt serving the same purpose. It is rather surprising that such an active Mollusk as the *Ancillaria,* should have been apparently deprived by Nature of sight, no eyes being visible to my observation in the specimens I kept alive. The species which were dredged by us from a sandy bottom, and in about fourteen fathoms water, were of a dirty-white colour, with dull, brown, elongated, oval blotches, rather sparsely and irregularly distributed. In the enormous size of the foot, and its being prolonged anteriorly and transversely lobed in front, and in the shell being partly concealed in the body of the animal, *Ancillaria* resembles *Natica.*

Among the pelagic skeleton Crabs may be ranked the genera *Erichthus* and *Alima,* curious transparent shrimp-like creatures, with spiny shields and elongated tails. I have detected, among the number of those we obtained, many new species. They are erratic and restless little animals, and swarm on the surface of the Atlantic, when the water is calm and tranquil. The *Phronima,* another genus allied to them, is very frequently found inside the hollow, transparent bodies of the *Beroe* and other Medusæ, but whether the *Phronima* employs these *Acalephæ* as canoes to sail about in, or whether it lives parasitic on their bodies, or feeds on the animalcules contained in them, I am unable to determine. The *Rhabdosoma armatum* (Adams and White) had been hitherto found only in the sea between Amboyna and Van Dieman's land. The head of this extraordinary Crustacean is terminated by a snout or beak nearly as long as the body, and the tail is furnished with three stylets as long as the muzzle, which, added to its elongated form and enormous eyes, makes it look like some imaginary fabrication, rather than a normal production of Nature. It swims by suddenly straightening its stick-like body when in a bent position, and moves either backwards or forwards. It is sluggish in its motions compared with other *Hyperiadæ.* Another genus is allied to *Vibilia* (Milne Edwards,) but has a more slender conformation, and wants the thickened and cylindrical superior antennæ; the four last segments of the body, moreover, are more elongated, and differ from the rest. The *Phyllosomata*, with their foliaceous, transparent carapaces, and diaphanous members, and of which we have observed one or two new species, move about like the ghosts of Stomapods. They are apathetic and sluggish, notwithstanding their eyes being well-developed, and their organization pretty complex, and in calm weather may be taken with a net in large numbers floating on the surface of the sea. Despite the fifteen species enumerated by Edwards, those described by M. Guèrin in the Voyage de la Coquille and Mag. de Zool. for 1833, and those that exist in the British Museum, there still remains much to be known before a perfect monograph of the *Phyllostomatidæ* can be formed.

Notwithstanding that Crustaceology abounds in forms sufficiently bizarre, those very singular paradoxes, the *Zoeæ,* exceed them all in curious and fantastic shapes. One form, which I have provisionally christened *Zoea-boops,* would serve as an excellent model for a grotesque monster in a pantomime: in fact, they all more resemble phantasms than the ordinary organizations we are in the habit of contemplating. I have noticed and figured several varieties, and from the constant recurrence of regular types among them, I should be inclined to doubt the accuracy of Dr. Thompson's opinion, that these whimsical-looking beings are merely the larvæ of different kinds of Crabs; and this more particularly, as the Zoeæ are generally found in the high seas, where few of the larger Crustacea are ever discovered, were it not for the investigations of Rathké on the development of the *Astacus fluviatilis,* and the additional testimony of Capt. Du Cane and M. Joly, who have obtained similar results. I can with certainty affirm that *Megalopa* is no true genus, as I have observed specimens in every stage of growth between the common type of *Megalopa* and that of ordinary Brachyarous Crustacea. Among Entomostracous Crustaceans, small animals with natatory feet terminating in two branches, and belonging to that division named *Cyproides,* the bodies of which are enclosed in a conchiform carapace, which causes them occasionally to be mistaken for bivalve Mollusca, were several individuals of the genus *Cypridina,* distinguished by having two elongated eyes situated in the median line, about the middle of their carapace. These rare and interesting little animals have been ascertained by Dr. Baird, who has studied profoundly this little known and difficult branch of Zoology, to be specifically distinct, and he has done me the honour to dedicate them to me under the name of *Cypridina Adamsii*; they are the third and largest species known.

The eyes of *Ianthina* are very minute, and terminal at the end of a peduncle, the animal, in this respect, and in having a long extensile proboscis and divided foot, resembles a Strombus. In the act of swimming, the dilated natatory appendages of the mantle are kept fully expanded, but I never observed them used in the same manner as the alar expansions of the *Hyalæa*, although, doubtless, in their progression through the water, their use is very great. The vesicular float adhering to the posterior flattened division of the foot, which is considered by some to be an extraordinary form of operculum, has the egg-sacs attached by short peduncles to the surface, and the female *Ianthina* appears to have the power of detaching that portion of the float to which the nidamental sacs are fixed, which then remains suspended on the surface of the water, where, exposed to the influence of heat and light, the ova undergo their ultimate development. Although we found these beautiful Mollusks cast up by thousands on the shores of the Meïa-co-shimahs, I never observed them make the slightest effort to crawl, but have frequently noticed them adhering together in masses, attached by the anterior part of the foot, which acts as a sucker. In company with the thousands of *Ianthina* swimming on the surface of the South Atlantic, were innumerable little fish of the genera *Gonostoma*, *Ichthyococcus*, and *Scopelus*, some of which were of singular forms, and, in general, of a steel colour. Among the pelagic heteropodous Mollusks, which we found, in crossing the South Atlantic ocean, were vast numbers of *Atlantæ*, and numerous *Carinariæ*. They are crepuscular animals, like the *Pteropods*, and are furnished with hyaline shells, of the greatest delicacy and beauty. The *Atlanta*, with an elegant, glassy, spiral, carinated shell, globose in one species, and flattened in the other, is quite a sprightly little Mollusk, probing every object within its reach by means of its elongated trunk, twisting its body about, and swimming in every direction, by the lateral movements of its vertical, dilated foot. I have frequently seen them descend to the bottom of the glass vessel in which they were kept, fix themselves there in the manner of a leech, by their sucking disc, and carefully examine the nature of their prison-house, by protruding the front portion of the foot in every direction. The shell of the globose species (*Helicophlegma Keraudrenii* of D'Orbigny,) is nearly membranous, and becomes opaque and shrivelled on exposure to the air; the compressed species (*Atlanta Peronii* of Lesueur,) has a firmer and more vitreous shell. Lamanon, one of the Naturalists who accompanied La Pérouse, considered the *Atlanta* to represent the shells of those extinct fossil shells the Ammonites, to which, however, it has but a faint resemblance. Although it is perfectly true that pelagic Mollusks generally swim on their backs, in a reversed position, as *Ianthina*, *Firola*, *Carinaria*, and *Atlanta*, yet, in figuring them, the analogy of the parts is better represented by placing them in the position most common to animals of this class. Thus the species of *Scyllæa*, *Doris*, &c., are never represented in a reversed position; nor are snails that lead an arboreal existence. The vertical expanded part of the body of *Carinaria* and *Atlanta* is sometimes erroneously regarded as a fin; and in the figures of Rang, Blainville, and De la Chiage, which are in an inverted position, this idea would, in the eyes of the uninitiated, be confirmed. Although I have myself frequently seen them swimming in this reversed position after capture, they frequently progress feebly with the shell uppermost. When fresh and just taken, I have seen both the *Carinariæ* and *Atlantæ* swim with their bodies in every position on their sides, on their backs, and with the foot downwards. The *Carinariæ* are swift and rapid in their movements, and dart forwards by a continuous effort, moving their foot and caudal appendage from side to side, as a powerful natatory organ, and do not progress by sudden jerks, like the *Atlanta* and *Hyalæa*. In these particulars, my observations are conformable with the statements of M. Rang. The true analogue of the foot of Gasteropods in *Atlanta* and *Carinaria* is the sucking disc placed at the posterior part of the vertically-flattened appendage of the body, but its use is circumscribed to that of enabling the animal to anchor itself temporarily to floating bodies when fatigued, therein offering an analogy to the gasteropodous genera of *Notarchus* and *Scyllæa*, which cling, in the same manner, with the back downwards, to floating sea-weed. The shell of the *Carinaria*, like that of the *Testacella* and *Cryptostoma*, covers only a small portion of the body of the animal, defending the more delicate organs; and in this we see a wise provision for permitting these pelagic Mollusks to move freely about, without being encumbered with a dense, heavy skeleton. M. Rang offers, as a generic character, the constant presence of asperities on the mantle; but I think this will hardly serve, as I have figured a species from the South Atlantic, which I believe to be new, which is perfectly smooth, and totally devoid of any processes on the mantle.

The mantle of *Cleodora*, like that of *Hyalæa*, is very much dilated, and forms two swimming appendages, and the intermediate lobe is semicircular; but there are no elongated lateral expansions similar to those that emerge from the slits in the side of *Hyalæa*. In many figures of these animals, the swimming lobes are represented as varying in form in different species, but from my observations, I should say that the lobes, vandykes, and foldings of the margin, are purely accidental contractions, and that commonly the margins are entire. The animal of *Cleodora Byzantium* has, when alive, the two swimming expansions very much elongated laterally, rather slender and rounded at their free extremities. In *C. cuspidata*, they are shorter and rounded. The *Hylææ*, no doubt, like the *Amphibia* among the reptiles, respire by the entire cutaneous surface, which is so soft and permeable; although, it is true, they have distinct breathing organs, disposed in the form of an oval ring, between two layers of the mantle on the dorsal region, which are open, to receive currents of water transmitted by the lateral apertures of the shell. The long, loose, lateral, pallial prolongations, which these testaceous Pteropods protrude from the lateral fissures of the shell, do not appear to be of much use in guiding or propelling, which functions are performed by the wide alar expansions. They may assist, however, in extending the surface of the mantle for the purpose of aëration.

On our passage home, I had numerous opportunities of observing the animals of *Argonauta tuberculosa*, and *A. hians*, in the living state, both species having been captured by us in large numbers by means of a trawl as they came to the surface of the South Atlantic, in calm weather, at the decline of day, in company with *Carinaria*, *Hyalæa*, *Firola*, and *Cleodora*. My observations all tend to prove, as might have been expected, the accuracy of Madame Power and M. Rang, and the fanciful nature of the statements of Pliny, Poli, and the poets. It is quite true that the female Argonaut can readily disengage herself from the shell, when the velamentous arms become collapsed, and float apparently useless on each side of the animal, and it is equally certain that she has not the ability or perhaps the sagacity, to enter her nest again, and resume the guardianship of her eggs. On the contrary, she herself, if kept in confinement, after darting and wounding herself against the sides of the vessel she is confined in, soon becomes languid, and very shortly dies. Numbers of male Argonauts were taken by us, at the same time, without any shells, and this being the season of ovoposition, may account for the females, in such a number of instances, being found embracing their shell-nests. As a convincing proof that the thin shell of the Argonaut is employed by the female as a safe receptacle in which to deposit her eggs, I dissected a specimen of *Argonauta tuberculosa*, which was firmly embracing the shell, which contained a large mass of eggs occupying the discoidal portion of the chamber, and the posterior portion of the roof.* The eggs very numerous, ovoid, pale-yellow, and semipellucid, are all united together by a delicate, glutinous, transparent, filamentous web which is attached to each ovum by a slender, tapering peduncle fixed to one extremity. The entire egg-mass is suspended to the body-whorl of the spire, at its anterior part, by means of a pencil of delicate glutinous threads, which retain it in a proper position.

On my return to England, I had an opportunity of examining the figures which Poli has given us in his magnificent work, "Testacea utriusque Siciliæ," where he has represented the egg-mass, though not *in situ*, but unravelled.† He observes regarding this body: "Ovorum congeries eboris nitorem æmulantium, partim jam ab ovario emissa, ac racemorum instar composita, cymbæ puppi involutæ adhærebat.‡" Professor Owen, in his Lectures on Invertebrate Animals, mentions the same fact; he observes that "in the Argonaut, the minute ova are appended by long filamentary stalks to the cavity of the involuted spire of the shell, where they are hatched.**

The posterior, globular part of the body of the female is in close opposition to the mass of ova, and thus, like a strange aquatic *Mygale*, or other spider, does this remarkable Cephalopod carry about her eggs in a light calcareous nest, which she firmly retains possession of by means of the broad, expanded, delicate membranes of the posterior pair of tentacles. When disturbed or captured, however, she loosens her hold, and leaving her cradle to its fate, swims about independent of her shell. There is not, indeed, the slightest vestige of any muscular attachment. In the specimen from which I made the drawings which will be given in the "Zoology of the Samarang," the ovary was distended with ova, but in a much less advanced stage of development than those deposited in the shelly nidus. Some of these latter were sufficiently matured to enable me to trace, under the microscope, the early indications of the being of the Argonaut, and although I have not followed the process very far, it is sufficient to ascertain the similarity, in a great measure, with the changes observed by Poli in the same genus, with whose remarks I have compared my own: the only difference, of any importance, appears to be, that Poli has regarded as the shell what I have called the yolk-bag. At first, the ova are semi-opaque, pale-yellow, and apparently minutely speckled, which is owing to the granular yolk seen through the delicate shell of the egg; afterwards, they become clouded with light brown blotches, and three dark spots make their appearance, one for each eye, and one for the viscera; these spots, in the next stage, approach each other, and a faint outline of the future Argonaut is perceived in the form of a club-shaped embryo, rounded in front and tapering behind; the front part then becomes lobed, a black mark for the horny mandibles is perceived, and the eyes become large and prominent. The yolk-bag or vitellus, is next seen very distinctly, and the processes, extending from the head, are become more elongated. Here, however, I was obliged to stop, this being the most perfectly-developed embryo I could find among the ova. The eggs in contact with the front part of the discoidal portion of the shell, where the egg-mass is attached by the glutinous threads, are the most forward in their development, while those in the posterior part of the chamber, are much less matured. Poli's account of the development of the ova is as follows: "Ova quæ in primis eburneo candore nitebant, tenui veluti nubecula perfundebantur; mox bina puncta subrubentia hinc et illinc sese conspicienda præbuerunt in regione oculorum eaque deinceps protuberantia evadebant. His perfectis, aliud punctum eodem colore perfusum prope ovi fastigium oculos supereminens apparuit: quod quidem oris embrionem satis luculenter ostendebat."*

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* This calcareous nest of the Argonaut, so ingeniously formed by the instinct of the mother for the purpose of protecting her eggs from injury, thus resembles, in some measure, those nidimental capsules secreted by many marine Gasteropods for the preservation of the immature embryos.

† Tab. xli. f. 2.

‡ p. 10.

** Lect. on Comp. Anat. of Inv. An. p. 360.

There is considerable difference between the animals of *Argonauta tuberculosa* and *A. hians*. In the *A. tuberculosa* the sac-like mantle is more ovoid and elongated; the head is narrower; the infundibulum is broader, shorter, and furnished, at the upper and anterior extremity, with two conical prolongations; the eyes are considerably larger, and slightly more prominent; the tentacular arms are much shorter in comparison, and of greater width, more particularly at their basal portions. The suckers are much larger, more prominent, and placed closer together. This species varies also considerably in colour from *A. hians*. The extremities of the brachia are marbled with deep red-brown; and, in the other parts, are covered with large irregular, oval, reddish blotches, each margined with a dark colour. The circumference of the suckers is marked with brown spots. The upper surface of the infundibulum is covered with pale pink, rather scattered, and irregular quadrate blotches, margined with a dark red-brown. The mantle, on the dorsal surface, is densely sprinkled with round and square spots of a chesnut-brown and crimson, of different sizes. The velamenta are minutely punctulated with crimson and red brown, and have a more bluish tinge than those of *A. hians.* The under surface is mottled and punctulated with dark chocolate on the arms, and on the body, is marked with small, irregular, dark, red-brown spots. In *Argonauta hians,* the body is more globose, and broader from side to side, the head is much wider, and the tentacles are narrower and more elongated. The suckers are less elevated, smaller in comparison, and situated at a greater distance from each other. The mantle is covered with round spots and longitudinal linear markings, of a bright crimson colour. The entire animal wants the brown, dark appearance produced by the markings of *A. tuberculosa,* and is of a lighter tinge and more delicate appearance.

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* Test. utriusq. Siciliæ, &c., p. 10.

The following Epigram of Callimachus on a Nautilus which addresses Venus, on having been deposited by Selene as a votive offering of maidenhood in her temple, though often alluded to by writers on Natural History, has not, so far as I am aware, been hitherto rendered into English. My readers are indebted for the present version to my brother, Mr. Ernest Adams, who informs me that it was the custom of the Greek girls, on arriving at years of discretion, to consecrate to Venus the playthings of their childhood:

"Once as a sailor-shell I sported o'er
The azure wave: but now on Smyrna's shore,
Cypris, I grace thy shrine—the darling toy
Of fair Selene and her childhood's joy.
If wandering winds breathed soft, my tiny sail
Was duly spread to catch the summer gale:
If golden calm upon the waters came
My nimble feet were oars; and hence my name *
I cast myself on Julis' shore, that thou
Mightst glory, Cypris, in the maiden's vow.
No radiant Halcyon now with azure crest
Will seek my chambers for its sunny nest.
Thank fair Selene, then, whose virtues grace
The city of her proud Æolian race."

Becalmed off the African coast, some hundred miles from the land, large numbers of insects were perceived floating on the surface of the water, some *Acrydia* and *Locusts* being still alive. A large species of *Colymbetes* was taken quite perfect; but other singular forms, as *Coreus*, &c., were more or less injured by the action of the water. These were blown by the off-shore breeze, most probably from flat, sandy tracts, where there is but little shelter and few trees. More than one species of *Halobates* was seen swimming on the calm water, in the manner of *Gerris* and *Geometra*, by sudden jerks. This insect however appears, if not pelagic, to be at least altogether marine.

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* Polypus—many-footed.

CONCLUDING REMARKS.

"When a traveller returneth home," says Bacon, "let him not leave the countries where he hath travelled altogether behind him." Acting up to this excellent advice, I have, in the preceding Journal, written at the time, and generally on the spot, thrown together notes on the habits of various animals, and a few ethnographical and physical remarks on the inhabitants of the countries visited during the expedition of the Samarang; and with these I have interspersed, here and there, desultory botanical observations, and short descriptions of natural scenery. Being but an amateur Naturalist, and not extensively acquainted with the bibliography of Zoological science, I have seldom ventured to give more than the name of the generic group to which the animals I have alluded to, respectively belong. The scientific results of the voyage will be brought before the public in the "Zoology of the Samarang," now preparing for publication.

The researches of various nations in the Indian Archipelago, and among the islands of the Chinese Seas, instituted by the wise liberality of European governments, or suggested by the pious zeal of philanthropic men, have been gradually revealing numerous interesting and important phenomena in the history of that comparatively unknown world. The wonderful and mysterious forms of animal and vegetable life that enliven those ocean-gardens, and the physical and social peculiarities of the various tribes that inhabit them, are daily becoming more familiar to the reading public. Our political connexion with the Chinese coast, has invested the numerous tribes, that throng the approaches to their ports, with an interest they never possessed before; and the recent cession of Labuan has, perhaps, laid the foundation of a British interest in those seas, that may materially interest the future destinies of our eastern possessions.

All over the world Creative Intelligence has thrown organic matter into living forms of such interest and beauty, that the "divina particula animi," which renders man

> "Lord of the wide world and wat'ry seas,
> Endu'd with intellectual sense and soul,"

cannot fail to observe them, and, having observed, to appreciate, and endeavour to make others appreciate them. Now, being engaged in the survey of seas hitherto but imperfectly explored, and in the examination of islands, many of them barely known beyond their existence on the charts, it is hardly to be wondered at, that our harvest has been plentiful and our researches crowned with success. And really, when among those chosen individuals, who are destined, "mid sands, and rocks, and storms, to cruise for pleasure," I observe any of their number pass unheeded by such golden opportunities as they might enjoy, I am apt to exclaim with Beattie's Minstrel,—

> "O, how canst thou renounce the boundless store
> Of charms which Nature to her votary yields!
> * * * * * *
> O, how canst thou renounce, and hope to be forgiven!"

Keen perceptions of the sublime and beautiful in nature, constitute in an intelligent mind one of the most pleasurable sources of human enjoyment; and I agree with what Pythagoras is reported to have said in his conversation with Leontius, that "as there is nothing more noble than to be a spectator without any personal interest, so, in this life, the contemplation and knowledge of nature are infinitely more honourable than any other application." My opportunities of ascertaining the existence, and defining the limits, of those centres of organization said to exist on the surface of the earth, and which researches into the geographical distribution of plants and animals tend to elucidate, have been very limited; indeed a Naturalist, in a ship, may be compared to a bird of passage, which, reposing here and there in the course of its flight, gathers a stray grain or so, and is off in a moment; nor must the remark of Bernardin de Saint-Pierre be lost sight of:—"La nature est infiniment étendue, et je suis un homme très-borné."*

With reference to the natural history of the Philippines, that sagacious and most indefatigable traveller, Hugh Cuming, Esq., has anticipated us in many points; and in the China Seas, the elaborate researches of De Haan and others, have left us little more to do than follow in their footsteps. A parting word in extenuation of the style I have adopted in the preceding Summary, and I respectfully take my leave. It is, I think, right, that in the present reading age, the Naturalist should impart to the public some of the amenities of science, as well as those results of graver studies, which can necessarily be appreciated by but few. What a pleasant halo, for example, has Darwin thrown around the Linnæan system of Botanical arrangement, by bestowing on us his "Botanic Garden!" White of Selbourne, Waterton, and Mudie have bestowed the same bright charm on Ornithology, Johnson on Zoophytes, and Mantell on Geology. It savours of melancholy to admire beauty only in terminologies, and, as Alfred Tennyson observes,

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* The multifarious avocations of the Naturalist are thus pleasantly alluded to in a letter written by De Lamanon, one of the unfortunate Zoologists of the Expedition of La Pérouse: "I have fish to anatomize, quadrupeds to describe, insects to catch, shells to class, events to relate, mountains to measure, stones to collect, languages to study, experiments to make, a journal to write, and Nature to contemplate."

> "See no divinity in grass,
> Life in dead stones, or spirit in air."

A BRIEF

VOCABULARY OF LANGUAGES.

It was my original intention to confine the following Vocabulary simply to those words which would have served as comparisons for Philological purposes, and the observations of Mr. Adams applied directly to that object. The materials in my possession appeared, however, of so much importance to seamen visiting the regions to which the Vocabulary referred, that it has insensibly swelled in volume to its present dimensions; and will, I trust, serve the purpose of aiding visitors in obtaining supplies, or in making known either distress or important wants. It is not given with any pretension to a knowledge of the various languages of which it is composed; all I claim is a most scrupulous attention to the authorities from which it has been compiled, and, from the nature of the very conflicting documents, a labour far beyond what I had anticipated.

The work was commenced amongst the Islands of the Eastern Archipelago, with the intention of completing, as my own study should qualify me, a general Vocabulary for those regions and upon the most extended scale. Our return before this could be carried out, compelled me to cut off the work at the point to which it would be useful to the Philologist; and in this state only it now appears, although more extensive materials remain for further pursuit. I will, therefore, merely state the authorities which have been consulted, and trust my production to the mercy of critics, as a mélange of well-authorized words in their several languages.

The Sooloo terms were obtained from perhaps the purest source in Sooloo, viz. from the Datoo Danielle and his family. The Malay printed characters being placed before them, they first pronounced the Malay word, as exhibited in English characters, and then gave the corresponding term in the Sooloo language. As this was frequently repeated in the same work, *similar relative* terms, given by *separate members* of the family, served to check mistakes. In the Malay terms I have adhered to Marsden's Dictionary, although the Dutch Dictionary, as well as the Vocabulary of the College of Malacca, varies considerably, especially in the use of *i*: thus, we have for *black, hitam, itam,* and *etam*; the latter is that of Marsden; it is at variance with the Malay sound, for which I should prefer *itam.* The Bisayan, Iloco, and Cagayan are partly taken from the work on the "Filipinas" before alluded to, as well as from my own notes, aided by the Padres of Batan, and my friends at Manila. To the Padres of Batan I am indebted entirely for the language of that Island, great part of which was written by them for the use of the newly-arrived Padres. The Tagala has been derived from a very complete work published in 1796. The Chinese is from a Vocabulary by the American Missionary, Dr. Bridgeman; and the Korean and Japanese from publications by Medhurst, 1830, and Philo Sinensis, 1835, at Batavia. The three latter languages being rarely understood without the written character, may not be so completely useful to the traveller; but I have had sufficient experience of their value to know that the natives will comprehend if they *wish.* It is invariably the practice of these people to affect great mystery about their *spoken* language; they will not understand unless it suits their purpose or interest, and this most especially with the Japanese

Trusting my efforts in this cause will be received with simply the credit due to a collector of scraps, and hoping that it may prove useful to the traveller, I leave it to its fate with the following observations of Mr. Ernest Adams.

INTRODUCTORY OBSERVATIONS

BY

ERNEST ADAMS, Esq.

The peculiar discovery of our own age, that comparative philology must ever constitute an important agent in any investigation into the ancient history of a nation, must shortly test its value and accuracy by an analysis of the scattered dialects of the East, and a careful comparison with the oriental branches of the Indo-European family of languages; and whoever contributes, in however limited a degree, to the prosecution of these researches, is entitled to the thanks of all who are interested in historical speculations. The collection and publication of vocabularies by those, whose peculiar position and pursuits have afforded them facilities for the acquisition of such information, are always valuable. It should be the especial care of gentlemen commissioned to explore regions comparatively unknown, not merely to accumulate the beautiful forms of organic life, and information of a commercial and political value, but to secure, by a copious collection of vocabularies, and a careful examination of the physical characteristics of the people, materials for tracing their social and political existence in ages of which the recording monuments have long been lost. When the usual beacons of the historical explorer are extinguished and the land-marks destroyed, Comparative Philology discovers in the mystic thread of language, a guide through the perplexing labyrinth; the darkness becomes less palpable; the forgotten and unrecorded actions of tribes and nations, mighty and enterprising when the world was young, emerge, life-like, from the obscurity of ages. Comparative Philology is to the Ethnographic explorer what Comparative Anatomy is to the Geologist. If a few scattered fragments are given, the lost marvel of a former epoch may be re-produced.

Influenced by this feeling, Sir Edward Belcher has resolved to submit to the public the following vocabulary, which he collected during his intercourse with the oriental islanders. They consist of specimens of the Tagala, Iloco, Bisayan, Batan, Sooloo, Japanese, Chinese, and Korean, with the corresponding words in Malay, English, and Spanish.

It is of course unnecessary to remind the professed philologist of the indisputable fact of the identity in origin of all the languages of the Indian Archipelago and of the South Pacific; but the general reader may perhaps require a brief intimation of the fact, and of the relative position of these various dialects in the great Malayo-Polynesian family.

The Tagala, or more properly Gala, (*ta* being, according to Dr. Leyden, merely the article,) the most ancient and wide-spread of the dialects of the Philippine Group, is, perhaps, the most remarkable member of the Malayo-Polynesian family. Its organism is by far the most perfect; its inflexions are most fully developed; and its peculiarities are retained in a state of greater purity and freedom from admixture with foreign elements, than is usually to be found in the case of those tribes who have been exposed to the disturbing influences of Arabic and Spanish connexions. The structure of the language has been examined with great industry, and its elaborate and perfect organization successfully elucidated, by Baron W. Von Humboldt, in the course of the interesting inquiries contained in his 'Kawi-Sprache.' "I commence," he observes (vol. ii. p. 315. § 16.) "with the Tagala; because it may be assumed as the primitive language and original source of the rest, inasmuch as it contains the peculiar structure of these languages in the clearest and most perfect form. It embraces collectively all the forms of which only solitary examples are discovered in the other dialects, and has preserved them, with very trifling exceptions, unmutilated and in perfect analogy."

The grammatical structure of the language, although not generally known to philologists, is still accessible to all who are acquainted with German literature; but I am not aware that any further attempts have been made to form a Dictionary and to supply the curious enquirer with comparative tables, than a few vocabularies of limited extent, scattered through the writings of the Spanish missionaries, many of whom were acquainted with the language, and have translated several religious works into Tagala.

The structure of the Bisayan dialect, spoken in the islands of the Bisayan Archipelago, part of the Philippine Group, is similar to that of Tagala; "der allgemeine Typus beiden derselbe ist," says Humboldt. But, though cognate languages in origin, the Bisayan differs as a dialect from the Tagala. The examples adduced in the comparative tables amply demonstrate the close connexion between them.

The Iloco, another Philippine dialect, spoken in certain parts of the Island of Luzon, stands in the same relation to the Tagala, as the Bisayan; but its local distribution appears to be much more confined.

The Batan, or Bashee, is spoken by the inhabitants of the small group of islands of that name, lying to the north of the Philippines, and, as may naturally be supposed from the geographical position of the islands, is closely allied to the Tagala. Indeed, the inhabitants are stated to have been a colonial off-shoot from the powerful neighbouring tribes of Luzon.

The Suluk, or, as it is commonly written, Sooloo, is certainly identical in origin with the other members of the Malayo-Polynesian family; but is more widely separated from the Tagala than either the Bisayan or the Iloco. We shall presently see that it presents points of identity with the Tagala on the one hand, and with the Bornese Dyak on the other.

There exist various and striking peculiarities in the physical appearance of the inhabitants of nearly all these islands; those dwelling in the interior and on the mountains, usually exhibiting a different conformation from those on the plains and the sea coast. But in spite of these physical peculiarities, there can be little doubt of the actual identity, at a remote period of the world's history, of these mountaineers with the Malays and other tribes that have settled on the coasts, and colonized those portions of the islands with the usual daring and success of a maritime people. Even the Dyaks of Borneo, whose language and external appearance have led many enquirers to consider them as a race distinct from the Malays and the tribes inhabiting the neighbouring islands, must have been indebted to some common parent-stock for the language they now possess. Consider the following comparative table of Suluk, Malay, and Dyak words, a table which might readily be extended, but which is sufficient for our purpose.

COMPARATIVE TABLE.

English.	*Suluk.*	*Malay.*	*Dyak.*
Sun	mata suga	mata ari	mata su
Moon	bulau	bulan	bulau
Hair	bohook	rambut	bōk
Head	oo	kapala	uho
Ear	taingah	telinga	telinga
Eye	mata	mata	mata
Nose	hilung	idong	idong
Mouth	simud	mulut	mulut
Teeth	ipun	gigi	jipun-nipun
Tongue	lilah	lidah	dila
Leg	bitis	kaki-betis	kake-betis
Foot	siki	kaki	kaki
Wife	banah, sawah	bini	sawa
Father	ama	bapa	ama
Mother	inah	ina	inna
Sea	lau ood	laut	laud
Star	bitŏon	bihtang	bitang
River	söo bah	sungei	sungei
Wind	angin	angin	angin
Deer	umbun	umbun	ambun
Hog	babici	babi	babi
Gold	amas	amas	amas, mas
Iron	basi	besi	besi
Salt	asin	masin	siah
Black	mai toom	elam	mitum

This table places the Suluk language in close connection with that of the Dyaks. It would be easy to construct a similar table to prove its identity with the Tagala language.

It is time, then, that the medium of intercourse with these nations, the various dialects spoken among the islands, should arrest the attention of the Philologist, and undergo that patient and careful investigation, which the importance of the subject demands. The inhabitants of these seas, scattered in dense masses over a large portion of the eastern world, and connected for so many centuries with the interests and political prosperity of European nations, have, till very recently, occupied an ambiguous, and perhaps false, position in our ethnographic and philological charts.

VOCABULARY

English	*Spanish*	*Malay*	*Bisayan*	*Sooloo*	*Iloco*
ABDOMEN	abdomen	prūt		tian	
Able	habil	kwāsa		manjadi	
Above	arriba	de-ātas	sa itaas	hata as	ugato
Abundant	abundante	limpah		mata aoud	
Acid	acido	māsam		mas lum	
Act (to)	hacer	buat		hinang	
Aged	viego	tuah	tigulang	ma as	lakai
Alike	igualmente	sāma		sah lih	
Alive	vivo	īdup		bohih	
All	todo	samoā	angtanan	kataau	amin
Alone	solo	asa	usra		mey meysa
Also	tambien	lāgi	naman		castamet
Always	siempre	santiasa	gihapon		agnanayon
Anchor	ancla	sāūh		bojac	
Anchor (to)	anclar	lābūh		bogan	
And	y	dan		i van	
Anger	ira	amārah		mangah mah	mangah mah
Approach (to)	acercar	ampōokan			
Arm	brazo	langan			
Arrive	llegar	sampei	abul	aso ma tong	ida dateng
Assist	ayutar			na no nolong	
BAD	malo	jāhat	dautan	manghi, jahat	daques
Bamboo	bamboa	bambu			
Bay	bahia	teluk	looc	loo-ooc	
Bed	cama	tampat tīdor	higdaan	pug tu gan	idda
Before	delante	demuka	sa atubangan	hahaapan	sango
Behind	detras	de blākang	sa licuran	ha tai ikood	licudan
Behold	mirar	pandang, tinju	mirar	atood, koang	mirar
Believe	creer	perchāya	mag too	ahagadkah	panang pati
Belly	vientre	prut		tian	
Below	abajo	de bawah	sa obos	habawah	baba
Better	mejor	ebih bāik	labing ma ayo	bukon mariaou	nasaysayaat
Bird	paxaro	burong	lungam, manuk	manuk	tumatayab
Black	negro	etam	maitim	maitoom	nangisit
Blood	sangre	dārah	dugu	dugu	darat
Blue	azul	birū, ĕtam	azul	bilu	azul
Boil (to)	cocer	masak	mag luto	bookal	pangluto
Bone	hueso	tulang		boo-koog	
Both	jos kos	ka-dūa			
Boy	muchacho	anak laki laki		anak oosoog	

OF LANGUAGES.

Batan	*Cagayan.*	*Tagala.*	*Chinese.*	*Japanese.*	*Korean.*
budek		tiyan	tù fu	footoo bara	pai
		ma	nang	no woo, yokf	noŏng hăr
	utun	itaas	tsai shang	oo-ye-ni	ōōs
racug		hilab	fan shing	amata	nā oŏr
		asim	swan	soo-yu-ki	swīr
mamarin		gaud	tso	o-ka-naf	hăr
	lakalakai	matanda	làu nien	oi, to si yo ri	noŏr koŏr
		camucha	siang tung	o-na-zi-si	hăn kā tsī
		buhay	kwòh tung		
	ugamin	lahat	kiài	mi na	mōō roŏt
	laman	ysa	tu yi		hoŏr
caan	cunepaga	naman	yi	ma-da	ttŏ
	mafuga	tuituina	chang shí	it-te-mo	myōn myōn
		sao	náu	ī-kā-rī	tāt
			kōo ōō tē ī	ī-kā rī ō rōs	p'hŏ tyōng
caan		at	ping	de, to-woo-si-te	mār nī oŏr
cailot		enojo, galit	nù kì	i-ka-ri	poōn hăr
mipangsen		cohit	king kin	tsootif	līm hăr
quiguddian		camay	shau pi, hī	hī zī	p'hăr
sinalien, mauara	lubbe	dating	tài tàu	i-tar	tā tă roŏr
		tolong	siáng páng	to rit	poōt toōr

Batan	*Cagayan.*	*Tagala.*	*Chinese.*	*Japanese.*	*Korean.*
maraghet	marakai	masama	tài	warsi	mŏ tsīr
ka oo ai an		cauayan	chu, tsīk	ta-ke	tāī
kana ian, banua		looc	hài wàn	ha-ma	moōr kōō poōi
ichigan	aguiddan	banig	chuàng	yoō-kā	sāng
	arubang	sa harapan	tsung tsien	ma-ye-ni	ārp
	licuc	licurran	hau mien	no-tsi-ni	tooi
	paca, singan		kàn	mi-ka-her	por
	manguruc	manioala	sin	zin-sur	sīn t'hyong
budek		tiyan	tu fu	ha-ra	păī pŏk
	gucah	ibaba	hià, kà	sitani	ārăī
mapipia	curuga mapia	maigni	kang hàu	yori yokf'	ts'hăr ā rī
	mamanu	ibon	niàu, tyŏ	to-ri	sāī
mabaghen	manguin	maytim	hi, kŏk	kfoo-ro-si	kō moōr
	daga	dugù	hine	tsi	p'hī
majah, buhun	fucca	bughao	àn	ha-na	tsok
cugaten	palutu	magluta	chiù	ir', nir',	săr mōōr
tughan			ku tau	ho-ne	spyō
sira da dua		quita	liàng kò	foo-ta-he	toō
mudeg		bata	tung tsi	moos-ko	syŏ tŏng

English.	*Spanish*	*Malay.*	*Bisayan.*	*Sooloo.*	*Iloco.*
Bread	pan	rōtī	tinapay	apain	tinapay
Break (to)	romper	pātah	mag quisi	bag-bag, bilak	panang piguis
Breast	pecho	dāda		dag hah	
Bring	traer	bāwa	dalhin	da hah	panang ipan
Brother	hermano	sudāra lakī lakī	igsuon uga laqui	cabsat a lalaqui	
Bullock	buey	sapi kasim	vaca		baca
Burn	quemar	bākar	mag sunug	sagar	panang urum
Butter	manteca	mantega	tambok	mantecilla	manteca
Buy	comprar	bilī	mag palit	bii	igagatang
CALF (of leg)	pantorilla	jantong betis		jantong bitis	
Calico	calicad	kain pūtīh		kain putih	
Call	llamar	pañggil		tawang	
Calm	calma	tedoh		li noh	
Cape	cabo	tanjong		duhul tandoh	
Careless	descuidado	lalci		ma la lei	
Carry	llevar	pikul		mak dar	
Cat	gato	kūching		kuting	
Catch	coger	cangkap		sag gow	
Chain	cadena	rantei			
Change (to)	cambriar	ūbah		ganti	
Channel	canal	trūs-an			
Cheap	barato	mūrah		mulah	
Cheat (to)	enganar	kīchū			
Chief	xefe	kapāla			
Child	infante	anak		anak	
China	China	benūa Chīna			
Choose	elegir	pīlīh		mag pii	
City	ciudad	negrī	longsod	ilis	
Clean (to)	limpiar	men-chūchi	paghauan		panagdalus
Clean	limpio	chūchi	mahanan	soo-chi	nadalus
Clever	diestro	pandei		pendei	
Coal	carbon de piedra	areng			
Coarse	basto	kāsar		mai laag	
Coast	costa	dārat			
Cock	gallo	āyam jantan		manuk oomagok	
Cocoa-nut	coco	kalāpa, nior		boo tong	
Coffee	café	kawah			
Cold	frio	sejuk	matugnao	ma hig goot	nalamec
Colic	colica	sānak-prut			
Come	venir	dātang		marikau	
Conduct	conducir	antar	dalhin		panangitulid
Cook (to)	cocinar	memasak		boo kal	
Copper	cobre	tambaga	tumbaga	tumbaga pula	

Batan.	*Cagayan.*	*Tagala.*	*Chinese.*	*Japanese.*	*Korean.*
tinapi	tinapay	tinapay	mien pau	mān zyŏō	mān toō
	magatta	punitin	tà làu	ya-boor'	p'hā hār
batabat		dibdid	hiung	moo-ne	kā săm
maghap	apau onu ina	hatu	nà lài	mo-tsi kitar	īt koōr
	vagui	capatid	hiung	oho a-ni	ā ă, măt
baca	nuang	baca	tu	o-oos	syŏ ōō
matenten	manugui	masonog	shàu	yakf', takf'	poōr pōot t'hoŏr
	taba		niu yah		
	magattan	bumili	tàn	ka-oo	sār
altec		binti	kioh nang	tsoo-to zoo-ne	
			zyoon ho	wa-ta	yoon p'ho
uanuag, tavagan		tawag	kiàu	yob'	poō roŏr
mag teng		calinauan	fung tsing	yo-soo-si	kŏ yŏ
bahan		ongot	hài kiòh	sa-gi	
		alisaga	liàu tsàu	boo-yo-oo zin	toŏ moŏr
tyangay		hatir	tiàu	hi-naf	mēr
pusac		pusa	mau'rh	ne-ko	kŏī
		sagap	tsóh	to-ra-gur'	tsām oōr
		talicala	lien	kfoo-sa-ri	
		palit	kái	ka-war'	pyōn hăr
masupit			shúi kang	se-to	
mapunis		mora	kiá tí	ya-soo-ro	ts'hyōn hăr
cantap		daya	kwáng pien	a-za-mookf'	sŏ kōr
		dato	tau jin	s'ya-oo-gfoon	kwī syōo
mudek		aro, indong	ying 'rh	ko, yā yā	hăĭ ă
			Chung kwóh	Ka-ra tsi-na	Tsin nā
mamidi		halal	sinen	e-rab	kăr hīr
ili	ili	bayan	ching	mi-ya-ko	syōng
putausen	mama carenu	pahir	si kàn tsing	ki-yo-moor'	ssi soŏr
manamomamo	marenu	malinis	lung kàn tsing	i-sa-gi-yo-si	tsŏ hŏr
		pantas	ling li	ka-si-ko-si	ŏ tsōr hyōn
			mei tan	i-si-'zoom	sōor
mataba		macapal	tsú	a ra-si	koōr koŏr
		bay bay	hài pin	na-gi sa	moŏr kă ts'yō
sasabungan		sasabungin	kì kung	ni-wa-to-ri	tărk
onioy		niyog	yédsz'	ya-si	
			kià fí		
manamonamo	malumin	mapagui	lang	soo-zoo-sikf'	sŏ noŏr
		saquit tiyan	tútung	fookf' tsoo-oo	kwāk tān
may		pangaling	lai	kī-tăr'	ŏr
	panguiangay	maghatid	hing wei	sa-sids'	hīr
		loto	chú	nir'	săr moōr
		tumbaga	tung	do-oo	koō lī

English.	*Spanish.*	*Malay.*	*Bisayan.*	*Sooloo.*	*Iloco.*
Cough (to)	toser	batok		oo boh	
Cover (to)	cubrir	tutup		tutup	
Cramp	calambre	ka krās an		banhood	
Crooked	corvo	bengkok		bing kok	
Cry (to)	gritar	tangis		nagtangis	
Current	corriente	ārus		soog	
Customary	acostumbrado	biāsa		biak sah	
Cut (to)	cortar	pōtong	magpotol	o-too rung	pananguped
DAILY	cotidiano	s'ārī s'ārī		hadlaou hadlaou	
Danger	peligro	bhāya			
Dark	obscuro	galap		madoom	
Daughter	hija	anak perampūan	ane nga babai	anak babai	anak a babai
Day	dia	īnī	adlau	hadlau	adlaou
Day (to-day)	hoy	ini ārī	caron adlau	hadlau	ita
Dead	muerto	mati	patai	miatainah	masakit
Deaf	sordo	tūlī		bi soo	
Dear	caro	mahal	mahal	mahal, mabal	nangina
Deceit	engano	dāya		oolah	
Deep	hondo	dalam		maldoom	
Deer	venado	rūsa		oo-sah	
Demand (to)	demandar	minta			
Desire (to)	desear	andak	pag panchinaot	mabayah	panangessem
Detain	detener	menāhan			
Devil	diablo	shētān			
Die	morir	māti	patay	matei	ipapatay
Different	diferente	lāīn			
Difficult	dificultad	sūkar		masusah	
Dig	cavar	gālī		mag ka loot	
Dirty	sucio	chumar	mahugao		naragut
Disperse	esparcir	cherrei berrei kan		loo ma ang boo tas sar	
Dive	bucear	sellam		loo moo doop	
Divide	dividir	cherrei		magbaghi	
Do	hacer	būat			
Doctor	doctor	dūkun			
Dog	perro	anjing	iru	idu	aso
Door	puerta	pintu		la wang	
Dream (to)	soñar	ber mimpī		tagai noop	
Drink (to)	beber	mīnum	mag inum	mi noom	iyi num
Drown	ahogar	tinggalam		maloo nood	
Drum	tambor	gandarang			
Drunk	borracho	mābak		nahiluk	
Dry	seco	kring	mamala	matahai	namaga

Batan.	*Cagayan.*	*Tagala.*	*Chinese.*	*Japanese.*	*Korean.*
mangau		obo	hái sau	si-wa-mookf'	
		taquip		o-yuf'	kāī tsī
		ngimi	chau kiu ching	ko-moo-ra	
mabacut		buloctot	kiu ti	tsoo-boo-sa-ni	koō poŏr
altec, mililiac		binti	kioh nang	nakf'	oŏr
riess		agos			
		ogali	kwei kū	foo-oo-sokf	
	magappo	putūlin	kòh	war', kir'	sā kīr
		touing arao	mei ji	fi go-to	
		panganib	kwan he	aya-oo-si	oōō ts'hāī
masarri		cariliman	he	ya-mi	myōng myōng
	ana nga babai	anagna babai	nu'rh	moos'-me	nyā sīk
arao	aggao	arao	yi ji	fi	nār īr
arao	saugao	arao	yi ji	ke foo	koŏm īr
nadiman	natai	patay	twán kí	si ni	tsoōk oŏr
		bingi	lung	tsoon-bo-o	koŏi mōk oŏr
	mafuina	mahal	kwei	ta-ka-ki-ne	koŏī hăr
caulāp		daya	chà wei	mo-ro-i	sŏ kīr
		malalim	shin	foo-ka si	kīp hŏr
		libay	lu	si-ka	sā săm
macdas		otos	sin wan	oot-tor'	kār
	queluyan	umibig ?	yuen	hos-soo	wōn hăr
		harang	liú	to-do-mar	mō mŏor
			kwei	o-ni	koōī sīn
madiman	natay	matay	tsu mu	si-noor	tsoōk oŏr
matarec		yba	pu tung	ko-to-nar	tā roŏr
casadit		linag	nàn	ka-ta-si	ŏ ryō ŏr
		dolang	kiue	hor'	p'hāīr
	marapin	marumi	wù wei	ke-ga-re	tō rō oōr
		bambal	fansán	tsir', firro-moor	koŏt roŏr
			mei shúi	mids'ner'	moō tsă mī
pacarughen		sambal	fan	wa-kar'	poōn kān
mamarin		gaua	tsó	has', sur'	hăr
		mangagamot	í sang	i si-ya	wī wōn
chito	quito	aso	kiuen	i-noo, in'	kāī
uaneb		pinto	mun	to, kado	moōn
		panaguinip	mung	yu-me-mir	skoŏm
uminum	uminum	ynum	yin	noin	mā sīr
		bigti	ni sz'	o-bor	spā tsīr
tādibang		calacalatongan	kù	tsoo-tsoo-mi	pōok
mabooc		mahalangohin	yin tsui liàu	yef' e-i	ts'hyoōī hăr
mab koh	mamaga	tuyo	kàn	ka-wa-ki	mă rŏr

English.	*Spanish.*	*Malay.*	*Bisayan.*	*Sooloo.*	*Iloco.*
Duck	pato	ītīk		itik	
Dumb	mudo	bīsū		oomaoo	
Dysentery	disenteria	chīrit lindir		io oos it	
EACH	cada uno	sā sātū		ambook	
Ear	oreja	telīnga		taingah	
Early	madrugada	pāgī ārī		mahináat	
Earth	tierra	būmi, tānah		leopah	
Earthquake	temblor de tierra	gumpah		gumpah	
Easy	facil	mudah-mudah		batah	
East	oriente	tīmor		timor	
Eat	comer	mākan	magcaon	ka-ma-oon	pannangen
Egg	huevo	telur	itlog	icloog	itlog
Embark	embarcar	nāik praū		sumahat pa kapal	
Enemy	enemigo	satrū			
Enough	bastante	sedang	igona	ganap	ison
Enter	entrar	māsuk		simaud	
Equal	igual	tāra, sāma		salidah	
Evening	tarde	patang		ha poon	
Every	cada	segala		ka taan	
Excellent	excelente	ēlok	matahom caayo	majantih	nasayaat unay
Exchange (to)	cambiar	tūkar, ganti		ganti	
Excuse (to)	excusar	meng-ampūn			
Explain	explanar	niatā-kan		matampalnah	
Eye	ojo	mata		mata	
FACE	cara	mūka		bayhoo	
Fall (to)	caer	jātuh	mag hulog	ma ho loog	parmac nag
False	mentiro	bohong	badak	ing àt	ulbud
Far	lejos	jāūh	halayo	mai oo	adayo
Fast	veloz	lakas		ma cha pat	
Fat	gordo	gumuk		matambuk	
Father	padre	bā pa	amahàn	amà	amà
Fear	miedo	takut	asing	bugah	buteng
Fear (to)	temer	tākut	magtahap	mabugah	panagbuteng
Female	hombra	betīna		babai	
Fever	calentura	dummam pana-		hing laon	
Few	poco	sedīkit		tio tio	
Fill	llenar	īsī		hī poon	
Finger	dedo	jārī		goo la mai	
Finished	concluyo	ābis	natapus	depassnah	tepassec
Fire	fuego	āpi		kayu	
Fire (to light)	encender	angus		lagar	

Butan.	*Cagayan.*	*Tagala.*	*Chinese.*	*Japanese.*	*Korean.*
		ytic	yáh	a-fir’	ŏ rī
		pipi	yá pá	o si	pōng ō rī
			lí ching	ha ra ga	syōr syā
			kak	o-no	kāk
titiduan		tayinga	’rh	mi-mi	koŏī
		paaga	tsàu	ha-ya-si	īr oŏr
madeder		lupa	tí	tsoo-tsi, tsi	ttā tī
nini		lindol	tí chin	dsi sin, nai	tī tsīn
maughamui		ualan linag	i, punan	ta-ya-soo-ki	soŏī ŏr
dudahan		silangan	tung	fi-ga-si	tŏng nyōk
acanen	cuman	cumain	shi	s’yokf	mōk oŏr
otioy	iluk	itlog	tàn	ta-ma-go	ār
		sacay	hi chuen		
cabusoyan		caauay	chan ti	ka-ta-ki	tăi tyōk
machirrapia	mapia ngana	siya	tsu	tar’, mit tar’	tsyŏk hăr
sundep		pasoc	tsin	ir’, ma-ir’	toŏr
malit		para	siàng tang	ta-i-ra-ka	p’hyōng hăr
cuyab		hapon	wan shang	yo-i	nā tsŏ
		toui	kóh	fito ko-to	măī yāng
maidep	curuga macasta	mainam	kia miau	ka-na-si, yo-si	ā lăm tā ŏr
		palit	kiau hwán	ka-yur’	sā p’hīr
		angao	shú	na-dam’	tsyōp oŏr
		say say	kiái	tokf’	tsoō nāīr
mata		mata	yen	mēy	noōn
dangoy		mucha	mien	o mo te	năt
	manafu	mahulug	hia	o-tsoor’	tsīr
midaday	siri	cabulaanang	kià	its-wa ri	kō tsoŏt
mabáùa	arayu	malayo	yuen	to-ho-si	mōr
		talar	kwài	ha-ya-si	kwāī kwāī
mataba		mataba	fi	ko-her	săr tsīr
ama	yama	amà	fù	tsi-tsi	ā pī
cammo		takot	kü	o-so-roo	nŏr nār
mamino	paganasin	matakot	pà	o-so-roor’	
mabaques		babayi	nü	o-na-go	kēy tsīp
		lagnat	fáh sháu	nets’ be-oo	kāk tsīr
deki		y ilan	shàu	soo-ko-si	tsyō koŏr
mapono		pono	mwàn	mi-tsoor’	ts’hăr
cacamay			shau chí	yu-bi	sŏn kā rāk
patayucaghen	balinaun	tapus	liàu shau	mat-ta-si	mă ts’hăm
apui		apuy	ho	fi, hi	poōr
padueducan		ningas	hó	hi-tak	poōr tsī toŏr

English.	*Spanish.*	*Malay.*	*Bisayan.*	*Sooloo.*	*Iloco.*
First	primero	pertāma		kaisah	
Fish	pescado	īkan	isda	istah	ikan
Flag	bandera	tunggal			
Flame	llama	niāla		ki mi glap	
Flesh	carne	daging		oo-nood	
Flour	harina	tepong		tapong	
Fog	niebla	kābut		gaboon	
Foolish	tonto	bodoh, gīla	gila	oo-maou	naneungneng
Foot	pié			si ki	
Fowl	gallina	āyam	monga	manook	pamusian
Friend	amigo	sohbat	abiau	bagai bagai	gaigem
Fruit	fruta	būah		bongah	
Fuel (wood)	madera	kāyū āpi		dungool kayu	
Full	lleno	punuh		hi poh	
GALE	tempestad	rībut, tūfān		hoo noos, bajoo	
Garden	jardin	tāman	tanamau	kabuu	camuyungan
Gay	alegre	suka-chita	hillaco		nacuticuti
Gently	mansamente	perlāhan			
Girl	muchacha	anak perampūan		anak babai	
Give	dar	kasih, bri	mag hatag	du mihil, kasik	pannangted
Glass	vidrio	kācha		kachah	
Go	andar	pergi		ug kau, ranow	
Goat	cabra	kambing		kambing	
God	Dios	Allah	Dios	Allah	Dios
Gold	oro	mas, amas	bulauan	amas	balitoc
Good	bueno	baik	masayo	mariaou	nalaing
—— day	buenos dias	salamat pagi	ma ayon adlau		naimbag a adlau
—— night	—— noches	tabe	—— gabic		—— a rahay
—— evening	—— tardes		—— gabic		—— amalem
Goose	ganso	gangsa		angsa	
Governor	gobernador	pemarentah			
Grave	sepultura	kubbūr			
Great	grande	besár	daco	dacola	dacquel
Green	verde	ījau	malimbau		verde
Grief	lastima	dūka		kasusahan hati	
Groin	ingle	konchi pāuh			
Guilty	culpado	sālah		sa ah	
Gun	escopeta	suapang		sinapang	
Gun (large)	pieza de artilleria	mariam			
HAIR	pelo	rambut		bo hook	
Half	mitad	tangah	hulabipan		napalalo

Batan.	*Cagayan*	*Tagala.*	*Chinese.*	*Japanese.*	*Korean.*
asa			mang	sa-i-si-yo	tsyōng
amon	sira	isda	yü	oo-wo	kŏ kī
			kí	ka-ta	kwi
caninas			ho yen	ho-no-woo	
kokor		paa	jan	nikf'	kŏ kĭ
			fan	ko-moo-gi no ko	kōok syōo
casa rian			yen wù	ka-zoo-mi	ān kāi
di asulib	ulapa	maumang	tài chi	o-ra-ka	ŏ rīr
cocor			kióh	a si	pār
upa	flupa	manuc	ki lui	ni-wa-to-ri	tărk
	cojun	caibigan	pang yú	to-mo da-tsi	poŏng ōō
asi na cayu		bunga	kwó tsz'	kfoo-da-mo-no	kwā sīr
oo rin			chài	ta-ki-gi	sōm
mapno			mwan	mita' a-ki	ts'hār
aujin		bagyo	kwàng fung	ha-ya-te	p'hŏ phōōng
camuhamuhaan	camulan	halamanan	yuen pú	ha-ta-ke	tŏng sān
racug	maratan	daquila	ta	ta-no-si-moo	yōō pŏk
		louay	màn màn ti	ya-wa-ra-ka	yŏng
mudeg mabaques		batang lalaqui	yù nù	o-na-go	kēy tsīp
	languiana	biguian	ki	a-taf	tā mŏr
paganinúm		bobog	pò li	ha-ri	tyōo lī
Makalu, angayan		lacar	hing	yukf'	kār
caddiu		cambing	shán yáng	ya-gi	yāng
Dios	Dios		Sháng tí	Ka-mi	
bajasan	bulanan	guinto	kin	kŏ-gā-nē, kin	sŏī
mapia	mapia	mabuti, y gui	hàu	yo-ki, yo-si	tsyŏ hoŏr
	mapia nga unma	magandang arao			
		magandang gabi			
		——— apon			
		ytic	'ngó	ga	kē yōō
manjoh ko yokol			tsung tu	boogi-ya-oo	
		libing, baon	twàn yen	tsoo ka	moō tōm
racug	dacab	malaque	ta	o-ho-i	k'hoŏn
maghah bulum	fuccaò	hilaò	lu	mi-do-ri	p'hă roŏr
bambayu		sayang	yù mun	oots'-ki	koŏn sīm ōō
pani		singìt	tùi che fung		
		sala	yù tsùi	tsoo-to-me	hō moōr
			niàu tsiàng	tet-po oo	tyŏ ts'hyŏng
			chung páu	tep-po-oo	
buoc		bohoc	fàh	ka-m, ge	t'hō rōk
ka, oualla	netalugarin	calahati	pivàn	na ka ra	pān

English.	*Spanish.*	*Malay.*	*Bisayan.*	*Sooloo.*	*Iloro.*
Hand	mano	tāngan		limah	
Handkerchief	panuello	sapū tāngan		sapu limah	
Hard	duro	kras		matugas	
Hat	sombrero	chipīau		topi	
Hatchet	destral	kāpak		kapak	
Have	haber	ada		a-oon	
He, she, it	el, ella, ello	diya		siya, kania	
Head	cabeza	kapāla		oo	
Hear	oir	dangar	mag doongug	doong oog	panangdengngeg
Heart	corazon	jantong		ha tai	
Heat	calor	ka-pānās-an		ma pas sooh	
Heaven	cielo	surga, langit	langit	shurga	languit
Heavy	pesado	brat	mabugat	mabugat	nadagsen
Hell	infierno	marka		naraka	
Help (to)	ayutar	tōlong		tolong	
Here	aqui	de sini	dinhi	di i	ditoy
High	alto	tinggi		mataas	
Hog	puerco	babi		babui	
Hold	tener	pegang	doua		cáadda
Hope (to)	esperar	mengharap	mag-hulat	tāgad	panaguray
Horse	caballo	kūda	cabayu	kudah	cabayo
Hot	caliente	panas		mapassooh	
Hour	hora	satu diam	usaca horas		maisa nga horas
House	casa	rūmah	balay	bāh i	balay
How much	quanto	brapa		pila	
Hunger	hambre	lāpar		liap	
Hungry	tengo gana	saya lapar	na ibigan co	hiapdi	ada ganasoo
Hurt	danado	rūgi			
Husband	marido	lāki		banah	
I	yo	aku		aku, ipoon	
If	si	kalau		bang	
Ignorant	ignorante	babal		dupang	
Impudent	atrevido	kòrang bìjak			
Inferior	inferior	kōrang		bukundah mariaou	
Infirm, ill	enfermo	lemah	masakit	sakit	masakit
Inform	avisar	brī tāu		naponongan	
Inherit	heredar	ber pusāka		nabakuk pusaka	
Ink	tinta	dawat		da wat	
Innocent	inocente	suchi		asoh masar	
Inquire	inquirir	preksa		a soo boo	
Instruct, show	ensenar	meng ājar		mangh handu	
Internal	interno	iang de dālam		ing malaoom	

Batan.	*Cagayan.*	*Tagala.*	*Chinese.*	*Japanese.*	*Korean.*
tanoro		camay	shau	te	sŏn
balangot		pamàhir	shau kin	te ki-noo	
makegnet		tigas	kien	ka-ta-si	koŏt sēr
tabago		sauing	kwan	kaf'-ri	kwān
vasai		palakol	fù	yo-ki	to ts'hăī
ara		may, mey	yù	ar' roo	ī sīr
nah		yea	tá	kare	tsyō
ogho		olo	tau	a-ta-ma	mā rī
managuey	pagguina	maquinig	ting	kikf'	toŏr nīr
		pozo	sin	sin no za-oo	nyōm t'hōng
cughat		banas	hiuen	as-si	tō oōr
hanit	langui	langit	tien	ten	hā nār'
maragmaet	maramo	mabigat	chung	o-mo-si	moō kō ŏr
caliatam			tí yòh	tsi kokf'	
		tolong	pàng	ta-sookf'	tŏ ŏr
cadia	toye	dito, dini	ché lí	ko-ko-ni	
makarran		taas	kàu	ta-ka-si	nŏ p'hoŏr
bagu, cuis		babuy	chú	ir no ko	tŏts tsēy
	quegga	magcaroon	nà ting	ni-gir'	kā tsīr
	maguiddac	maguintay	wang	no-zom	pă răr
	caballo		yi pi mà	'ma, moo-ma	măr
			je	as-si, nets'	tō oōr
	tadday nga hora		shí shin	to-ki, si	stăī sī
bajay	balay	balay	yi kien yu	i-e, i-he	tsīp kā
nacapirra		magcano	jòh kàn	so-ko-ba	kwī hā
capteng		gotom	tù ngò	fi-da-roo-si	tsōō rīr
acu apteng	egga y ayacu	aku mai gotom	tù mui	oo-ye	tsōō rīr
		panganganyaya	shàng	a-ta-ni	hăī hăr
cacobot		asauah	fù	ot-to	tsī ā pī
yakin, ako		aco	wó, yū	wa-re, wa-ga	nā
o on		cun	jòh	mo-si	mān īr
dianilib		cadi carunungan	pu chí	foo-zits'	
		mapangahas	wù kì tàn		
			hia tang		
dactad	mataki	saquit	ngàn	yo-wa-si	yāk hār
ybaguey		sdar	tung chí	tsoo-gfoor'	hŏ hăr
mangamuhun		mana	wei nie	tsoogf'	nī oŏr
tinta		tinta	me	soom'	syoō moōk
		ualan sala	nui	tsoo-mi	
		siyasip	ahà wan	to-oo	mōō rŏor
manaudu		aral	kiàu	o-si-gur	pŏ īr
		loob	nuì	oo-tsi-tsoo-ra	

English.	*Spanish.*	*Malay.*	*Bisayan.*	*Sooloo.*	*Iloco.*
Interpreter	interprete	jūro bhāsà		gool bhasàh	
Iron	fierro	besī		basi	
Island	isla	pūlo		joo	
Itch	sarna	kūdis		ka kaas koo rit	
JAPAN	Japon	Japūn			
Jealous	zeloso	chumburu an		chumbuhan	
Joy	gozo	ka sukā an		ka suka an	
Judge	juez	hākim			
Judgment	juicio	hukum			
Just	justo	betul		adil	
KEEP (see Hold)	tener				
Kettle (copper)	caldera	kwali		kawali	
Key	llave	anak konchi		koot chuk	
Kidney	riñon	būah pinggang		pamas tioon	
Kill	matar	būnoh	patiòn	bunoh	pamma patay
Kind	benigno	kasihan ati		kai laou	
King	Rey	baginda, raja			
Knee	podilla	lūtut		too hood	
Knife	cuchillo	pisan		la ring	
Know	saber	tāhū, tāū	mag hibalo	maing gnot	panangamano
LAKE	laguna	dānau		lanaou	
Land	tierra	tānah		lupah	
Large	grande	besár	daco	dacola	naouticuti
Last	ultimo	iang akhir		ka hapoau	
Laugh (to)	reir	tertāwa	mag catava	nagka tawah	panag catas
Lazy	tardo	segán, mālas		oo ska wan	
Lead	plomo	tīmah ētam		tingah itoom	
Leak (to)	hacer agua	bochor		boosloot	
Learn	aprender	ajar	magtoon	hin-du	panagsursuro
Leave	dexar	tinggal		tinggal	
Left	izquierdo	kirī		ooah	
Leg	pierna	betís, kāki		bilis	
Leprosy	lepra	kūdal		malang ba loompat, bulit manook	
Less	menos	korang deri-pada		korang	
Letter	carta	sūrat kirīman-an		sulat	
Lie	mentira	bōhong	bakak	pooting	ulbud
Lie (down)	descansar	bāring		kolungan	

Batan.	*Cagayan.*	*Tagala.*	*Chinese.*	*Japanese.*	*Korean.*
mapatoyo		dolo basa	fàn yi wàn	tsōo oo zi	t’hŏng să
bahdyan		bacal	tie	tets’	sŏī
pongso		polo	chau	si-ma	syōm tŏ
turi		galis	kàn lài	ka-yu-si	kă vyō ŏr
			Jipan kwoh	Nip-pon	ōr pŏn
		mapangiboghoin	tsi tú	ne-ta-mi	roō kwī
cayac		logor, toua	hì kwân	yo-ro-ko-bi	kīt kŏor
mapaysicas		hocom	hing ming	a-ze-si	
machirrapia		hocom		ko-to-ha-ri	săr p’hīr
anugher		banal	kung làu	i-sa-gi-yokf’	kong tsyong
			shùi hù	ya-kf’wan	tān tsā
tueag		solot	sò shì	zi-yo-o	swāī tsă
bato		bato	nui shin	moo-ra-to	k’hŏng p’hăs
mandiman	mamapatay	patay	shàh	oots’, ko-ros’	tsŏk īr
		maalam	wan hò ti	na-sa-ke	
patul		hari	wàng	o ho ki-mi	nīm kŏom
tuor		tohor	si	fi-za	moō roōp
		sundang	yi pà tàu	ka-ta-na	k’har
masulib	pasan nama	alam	chi	sir’, mo-no, sir’	ār
babau		dagat	liù	mids’-oo-mi	kă răm
tana		lupa	lì, tien	rikf’ tsi	ttā
racug	maratan	picaro soail	tà	pi-ro-i	t’hoŏp
		huli	mòh	sa-i go	kō
	jumalo	termaua	siau	foo-ra-oo	oō oōm
		huli	làn tò	o-ka-ta-ri	kī ŏ roŏr
		tinga	yuen	na-ma-ri	myōn
			lau		săīr
capachianao	maguiguiamu	aral	hiòh	ma-na-b’	pai hor
mapacaru		talauas	li	ha-nar’	lī pyōr
		calina	tso	fi-da-ri	ŏīr
pua		paa	kiòh	ma ta	tā rī
dipar		hila	mà fung	kat-ta-i ya-mai	lyŏng pyōng
dekai		colang	kang siau	yo-ri soo-ko-si	tŏr
tulas		sulat	shù sin	te-ga-mi	syŏ kān
midaday	sori	cabulaanan	shwòh hwàng	its’-war’, oo-po	kō tsŏot
		hinga	ngò tàu	ne-moor’	nōo oōr

English.	*Spanish.*	*Malay.*	*Bisayan.*	*Sooloo.*	*Iloco.*
Life	vida	niāwa			
Light	luz	trang	sagàa	masawah	silao
Light (to)	ligero	rīngan	magaan	maguan	nadaras
Like	semejante	sāma		sali	
Lime	cal	kāpūr		bang kit	
Lip	labio	bībir		igad, simood	
Listen	escuchar	intei	mag silip		panang sirip
Little	pequeno	kechil		kichi, tiu tiu	
Little (quantity)	poco	sedīkit	dictai	tiu tiu	bassit
Live	vivo	ber-idup		boohi	
Liver	higado	limpa		bagu	
Lock	cerraja	kunchi		kan-ching	
Long	largo	panjang		matahas	
Look (to)	mirar	līat	mirar	kitah	mirar
Lose	perder	īlang	maguala	na poo as	panna ca oan
Lost	perdida	luchut		nawah	
Love (to)	amar	kāsih		ka loong an	
Low	baxo	rendah		a bah bah	
Lungs	pulmones	pa-parau		paru paru	
Mad	loco	gila	buang	mag kang öog	mauyong
Make	hacer	būat		hi nang	
Male	macho	jantan, laki laki		oo-soog	
Man	hombre	ōrang	lalaqui	oo soog	lalaqui
Many (much)	mucho	bāniak	paghan	matahood	adu
—— times	muchas veces	baniak kali	maka daghan		nanim adu
Mast	arbol	tīang			
Meat	carne	daging	unut dabas	daging sapi	lasag
Medicine	medecina	ūbat		ubat, tuba	
Meet	encontrar	ber temū	magquita	mak baak	panagsarac
Mend	componer	bāīk ī	maglutos	tai à wah	panangabil
Mercury	azoque	āyer pērak		tubig pirak	
Merry	alegre	suka		kioogan	
Middle	medio	tangah		tengah	
Midnight	media noche	tangah mālam		tengah duum	
Milk	leche	sūsū	gatas	gatas	tubig tisoso
Mine (my)	mio	aku-pūnia		kaku	
Money	dinero	wang		pilak	
Monkey	mono	karra		a mo	
Month	mes	būlan		bulan	
Moon	luna	būlan	bulan	bulan	bulan
More	mas	lāgi		lagi, dugang	
Morrow	manana	īsuk, pāgi	ugma	kin soom	bigat
Mother	madre	amā, ībū	inahan	inàh	inà

Batan.	*Cagayan.*	*Tagala.*	*Chinese*	*Japanese.*	*Korean.*
		buhay	ming	i-no-tsi, me-i	mŏk sōōm
sogho	tulu	ylao	kwàng	fi-ka-ri	pyŏt
	malapao	malicsi	king	ka-roo-si	kā păi yā ŏr
		camucha	chung i	si-kau	kă t'har
		apog	pe kwui	its ba-i	
bibi		labi	shin	kfoo-tsi bir	ip si oōr
	nagguiguina	sumilip	tà ting	kikf'	toŏ roŏr
dekai		munti		soo-ko-si	tsyō koŏr
dekai	bassi	caunti	si au	tsit-to	tsă mŏt
mabiay		buhay	kù	i-ki-te-or	nār
		atay	kàn	kan-no za-oo	kān
		solotan	yi pà sò	ka-gi	pāī mŏk
racug		mahaba	chàng	na-ga-ki	kin
	paca singau	tingin	kan	mir'	pōr
	nararal	mauala	shi	oo-si-naf	tsīr
		pagcauala	shi liàu	ya poor	sŏn hăr
tchat daou		palasinta	ngài	ai-soor	să răng
		mababa	hiá	so-ko	nă tsăr
		baga	fí	ha-i no za-oo	poō hwā

mimagha	ulapa	olol	tien	kfoo-roo-i	mī ts' hīr
mamarin		gaua	tzo tsò	tsoo'-kfeor'	hă yō kūm
mapacay		balaqui	nàn	o-to-ko	
maha kai	lalaqui	tauo	jin	fi-to	sā rām
racug, aru	aru	marami	tò	o-si o-ho-si	mān hoōr
	nami yaru		tó tsz'		tōt tōt
		poliagan	tsiàng	ho-ba-si-ra	lōt tāī
	dumaga	laman	jau	nikf'	kŏ kī
tuba tuba		gamot	i hiòh	kfoos'-ri	yāk
	netafuran	maquita	yii	af', a i-af'	mā tsoŏr
	payan	paluin	pù	foo-se-soor	syōō lī
			shùi sing	mids' ka ne	syōō oōn
		malobogdin	hin jen	ta-no-si-mi	k'hwāī hăr
		calahatian	chung		kā ōn kăī
			pwàn yè	yo-na-ka	
sinusu	gatto	gatas	jii	ni-yu	t'hā lāk
dira, ko		ko	wò ti kwàng tò	wa-ta	nā
		pilac	tsien	ka ne	tŏn
		amo	mà lau	ma-si-ra	tsăīn nāp ī
bughau		bouàn	yi yue	ts'ki	tăr wōr
bughan	fulan	buàn	yue	ts'ki	tār wōr
ra racuhpah		lalo	tò siè	sa ra ni	tā sī
andelac	nonuma	bucas	ming tien	a-kfoor-fi	myōng īr
yna	yenà	yna	mù	fa-fa	ō mī

English.	*Spanish.*	*Malay.*	*Bisayan.*	*Sooloo.*	*Iloco.*
Mountain	montana	gunong, bukit	buguid	bood bood	bantai
Mouth	boca	mūlat		si mood	
——— of river	boca del rio	kwāla			
Move	mover	garak		mag ka hi bal	
Much	mucho	(*vide* many)			
Mud	lodo	lumpur		lōō moot, pi saak	
Murder (to)	asesinar	būnoh			
Music	musica	bunyi			
NAKED	desnudo	talanjang		hooboh	
Name	nombre	nāma		nama	
Navel	ombligo	pūsat		pusood	
Near	cerca	dekat	hadool	masu oog	asideg
Neat	lindo	brīsih		ma jan tae	
Necessary	es preciso	harus	gina hanglan	harus	pannacay payna
Neck	cuello	lēher		li oog	
Never	nunca	tīdak sekali	dile na ngamas	oolan ma sam-purna	saanpay
New	nuevo	bhārū		bagai	
Next	proximo	iang dekat		dugain	
Night	noche	mālam	gabé	du oom	rabiy
No	no	tidak, tīdah	dili	hūbolo, oalah	saan
Noble	noble	ber bangsa		berbangsa	
Noise	ruido	būnyi			
None	ningun	tiāda		ooalah	
Noon	medio dia	tangah ārī		oogtoo sugu	
North	norte	ūtāra		utara	
Nose	nariz	īdong		hiloong	
Not	no	tīdak		ooalah	
Now	ahora	sekarang		biya ha ya oon	
OAR	remo	dāyōng			
Obey	obedecer	tūrut		maagaad	
Of	de	pūnia		deripada	
Offended	ofendido	sākit āti			
Officer	oficial	pangūlū			
Often	muchas veces	ter-kādang			
Oil	azeite	mīniak		la-nah	
Old	viego	tūah	tigulang	mahāas	lakai
Only	solamente	sāja	usra		mey meysa
Open (to)	abrir	mem būka		umukab	
———	abierto	būka		na ookab	
Opium	opio	afyūm, madat		matad, afyun	

Batan.	*Cagayan.*	*Tagala.*	*Chinese.*	*Japanese.*	*Korean.*
ujar a makarran	amague	bondok	shàn	da-ke	mŏīs mōŏ lī
ngoso		bibig	kau	kfoo-tsi	īp kōŏ
		vaua			
		golapay	tsien	oo-gokf’	ōŏm tsŏok
racug		marimi		o-okf-ni	
hota		losac	ni	do-ro	tsoŏn hărk
		patay		oots’ ko-ros	tsŏok īr
			yoh		p’hōng byōŏ
binitaghut		hobo	chi shin	ha-da-ka	mēr
ngaran		ngalan	ming	na	īr hŏm
posed		posor	tsi	he-so	pâī skŏp
	arani	malapit	kìn	tsi-ka-si-ni	kăt kā
		mapagui	tsí ching	a-ta-ka-mo	pīn pīn
	meyanung	saukap	shì kâng	ka-na-me	mŏ rŏ mī
lagao		liig	king	kfoo-bi	mŏk
araba pandaan	aripaga nesima	cailanman	tsung wù	tsoo-ini	ōp săr
bujo		bago	sin	a-ta-ra-si	sai
		capouatauo	toz’	to-na-ri	pō koŏm
ghaghet	sabi	gaby	yé	yor’	pām yā
ungah	ari	yndi, dili	pu shi	i-ya	mŏt hăr
payna guen		mahal	tsun	ki	koōī kār
		ingay	shing		soōt toō ō rīr
araba		ysaman	mu yù	na-i	ōp săr
nakatayatoh		tanghali	chau	map-pir	
ydaur		hilaga	re	ki-ta	poōk pyok
mamundan		ylong	pi	ha-na	k’ho
ungah		dili	pu	na-i	ōp săr
		ngayon	mu hiá	i ma	tsoŏk koŏm
		gayong	tsiang	ka-i	nŏ
		sonor	tsun i	o-sa-moor	syoōn hăr
		ni	chí	no	kar
		sala	kwai		pōm hăr
		mangagana	kwân	tsoo-ka-sa	kwān wōn
ma pirua		maralas	tó tsz’	ma-i-da	tŏt tŏt
ha nein		langis	yù	ab’-ra	kī rŏom
malquen	lakalaki	matanda	kiù	o-i-tar’	tē
	lainan	maquisa	che	ba-ka-ri	ŏ tsîk
tuangan		icang	kâi	fi-rakf’	yōr
		icang		aker’	
			ya pien		

English.	*Spanish.*	*Malay,*	*Bisayan.*	*Sooloo.*	*Iloco.*
Or	o	atau		a tau ah	
Orange	naranja	līmau mānis		suoh mimoh	
Order (to)	mandar	sūruh	magsugo	dá àk	panagbaòn
Other	otro	lāīn	ang usa	dugaïn	sabali
Our	nuestro	kīta pūnia		ka too	
Outside	afuera	de lūar		ha goah	
Over	sobre	atas		ta as	
Owe	deber	ber ūtang		mang hootang	
PADDY	arroz	pādi		butas maputi	palay
Pain	dolor	pedīh	sakit		nasaquit
Paper	papel	kartas	papel	curtas	papel
Past	pasado	telah lālū		labai	
Passionate	apasionado	āngat		boong iss	
Pay (to)	pagar	timbang		báag bayad	
Pearl	perla	mutīāra		moot chah	
People	gente	ōrang		oosoog	
Pepper	pimienta	lāda	pamienta	lada	pimienta
Perhaps	quizas	barangkali	mao caha	kalu kalu	ngata
Physic	medecina	ūbat	tuba tuba	tuba tuba	
Physician	medico	dūkum			
Pig	puerco	bābi kechil	babui	babui	babui
Pirate	pirata	ōrang pumpak		rompak	
Place	sitio	tampat	samay		lugar
Plantain	platano	pīsang		sagin, sâing	
Plenty	copia	baniak		mataoud	
Pox, chicken	viruelas locas				
—— small	viruela			pali pankoot	
Poison	venemo	rachūn		choonah	
Poisonous	venenoso	berbēsa		berbisa	
Pole	palo	sātang			
Polite	cortes	sūpan		maingat adat	
Poor	pobre	meskin	macalaloog	miskin	napanglao
Poultry	gallineria	āyam īlīk	manook	manook	manuc
Pregnant	prenado	bunting		boo roos	
Present (a)	regalo	bing kis	hatag		regalo
Pretty	hermoso	bagus	matahom	bagus	nasayaat
Prevent	prevenir	menagah		lo angah	
Price	precio	arga		bili	
Promise (to)	prometer	janji		janjü	
Proper	proprio	pātut		patut	
Pulse	pulso	nādī		galak	
Punish	castigar	menyiksa		hoo koo mah	
Purple	purpureo	ūngū		ungu	
Put	poner	bāboh, tāroh	magbutan	hood hoodah, tawan	panangicabil

Batan.	*Cagayan.*	*Tagala.*	*Chinese.*	*Japanese.*	*Korean.*
an, munuh		cun	kwòh	ka	hŏk
cutay		lucban	tien tsang	kfoo-nen-bo	kyōōr kyōōr
	padoc	magutus	ming	se-sim	pōōn poō
tarek	tadday	y ba	pie	ho-ka-no	tā roŏr
namuen		ta	wô mun ti	wa-ta-kfs-to-mo-no	
		loual	wâi tau	ho-ka-ni	pāt
		y babao	kwò	oo-ye-ni	ōōs
		otang	kien	s’yakf’ gin	pīt
palay		palay	hó	a-wa	tsŏ
ynen	taki	saquit	tang	i ta-moo	ār hoŏr
		calatas	chí	ka-mi	tsyŏ hwī
		lingpas	kwò hâu	soo-ki-sar	ōr tsoŏk
macuyat		masucaling loob	sing ki ti	ha-na-da-da	stoŏt
mapagsa		bayar	kiâu	mookf’-yu	kā p’hŏor
layan			chin chù	sin s’yu	koō săr
sira		tauo	min		păīk syōng
	sili	paminto	chuen tsián	ko see-oo	hŏ ts’hyŏ
	numasimu	tila	hwòh ché		hŏk
tuba tuba		gamot	yòh	kfoos’ ri	yak
		manga gamot	i sang	kfoos’ si	wī wōn
bughu cuis		babuy	siâu chú	i-no-ko	tōt
		mamamangga	hâi tse	ka-i-sokf’	
	aguinan	bayan	chù		kŏt
binibueg		saguing	hiâng yâ tsiáu	o-ba-ko	p’hā ts’hyŏ
racug		hilab	fung shing		nā oŏr
			shúi páu	mo-ga-sa ?	
gotol			tau	tsoo-so-oo	tsō tsīn
y panulib		lason	tu, chin	dokf’ nil	
		lason	tu ti, chin tu	dokf’ ni	
saicher, cayu		cahuy	kán toz’	tsa-o	sā hwāt tāī
		maanianihin	yù lì ti	ley i gi	lēy tŏ
	macallalo	mahirap	pin	maz-zi	kā-nān hăr
manuc		manuc	kì lui	ni-wa-to-ri	tărk
		buntis	yù shin	ha-ran-de-or	pāīr
ipalaou	iniana amasingan	palayao	lí wu	okf’ri mo-no	tsyōn sŏng
	macasta	mariquit	hâu kân	ook-kfoo-si-i	kŏ ŏr
badauen		handa	lân tsù	foo-segf	lān ts’hyōōr
		bili	kiâ		kāp
		pangaco	ying ching	mats’-bar	hō hăr
		bocor	í		māt tāng
		sanhi	me	tsī soo dai	mā īk
		dusa	kia hing	ke-i-bats	tsŏī tsōōr
			pù tsing	moo-ra-sa-gi	tsă tsī
	panguipay	ilagay	fâng	okf’	toor

English.	*Spanish.*	*Malay.*	*Bisayan.*	*Sooloo.*	*Iloco.*
QUARREL (to)	contender	ber bantah		nag ka loh	
Quarrelsome	pendencioso	lang churi chakit		magbantah	
Queen	reyna	raja perampūan		raja babai	
Quick	presto	chapat	madali	machapat	nadaras
Quit	dexar	tinggal		mein	
RAIN	lluvia	ujan		oo lan	
Rain (to)	llover	ber ujan		mag oo lan	
Raise	levantar	ang kat			
Rank	condicion	panghat			
Rat	pata	tikus		ambow lupa	
Raw	crudo	mantah		mung ai oh	
Ray	rayo de luz	sinar		sinag mata sooga	
—— (lightning)	rayo	kilat	linti	kilat	sa lit
Read	leer	bacha	mag basa	bachaha	panagbasa
Ready	pronto	sedia		sedia	
Red	colorado	merah	mapula	poo lah	nalabaga
Reject	pehusar	anggan		tolakkan	
Remain	restar	tinggal			
Restore	restituir	perbalas			
Retire	retirarse	undur			
Return (to)	revenir	kambali		oo-i	
Rice	arroz	bras	bugas	bugas	bu gas
Rich	rico	kaya	sapisan	kawasah	masanicua
Right	justo	betul		henal	
Right	derecho	kanan			
Rise (to)	levantarse	bangkil		bang oon	
River	rio	sungei		soobah	
Road	camino	jalan	dalan	panow	dalan
Rob	pobar	rampas	mag canat	lang pas	panagtacao
Rock (*see* Stone)	roca				
Root	paiz	akar		gamut	
Rope	cuerda	tali			
Rotten	podrido	basuk		loo niott	
Round	redondo	bulat		tibook	
Run (to)	correr	lārī	mag dalàgan	nah gooi	panagtaray
SAFE	seguro	salāmat			
Sail	vela	lāyer	layag	laiar	layag asin
Salt	sal	gāram	asin	asin	asin
Same	mismo	sāma		salih	
Sand	arena	pāsīr		kalang, pasir	
Save	salvar	paliara			

Batan.	*Cagayan.*	*Tagala.*	*Chinese.*	*Japanese*	*Korean.*
		talo	tsang	a-ra-sof	tă t'hŏr
		pagaanay	hàu tsang tau ti	foo-zi tsi ga i	ts'hyo kīr
		haring babayi	kwàng hau	ki sa ki	hwāng hoō
ia	mabi	dali	kwài	ha ya si	spă răr
mapacaru		habilin	tui tsz' liàu	hanar	lī pyōr
matimuy		olan	yü	a-me	pī ōō
matimuy		olan	toh yu	a-me-foor	
ty angay		taas	kí	ta-kakf'-soor	toŏr
		caalaman	pin ki	kakf' si-ki	ts'hă rēy
carran, rakou		daga	shú	nez'-mi	tsoōī
		hilao	sang	na ma	năr kōp
		linanag	king shié	fi-na-ta	pijōt
ni puen nu adey	talli	lintic	tien	i-na tsoo-ma	pōn kāī
	mabibic	basa	tu	yom	nīr koŏr
		sarya	tsí pí	so na ye	īn p'hyōn
mavayat	ussin	pula	hung	a ka-si	poŏr koŏr
		bocor	kí ku	si ri sokf	pă rīr
		tira	chú tsái	to-do-mar, or'	mō moŏr
		saoli	fu hing	ka-yes'	ām koōr
		toloy	tùi	no-kfoor'	moō roŏr
capay bidi		coyompis	kwui, hwui lai	ka-her	tŏ rŏ hyōr
palay	bagga	palay	mí	yo-me	psăr
	maoaauaya	mayaman	fú	to-moo	kā ăm yōr
na monà		banal	shí	ī sa gi yokf	ŏr hōōr
		talandac	yú shau	mi gi	ŏr hoŏr
may bangun		tindig	kí shin	o-kor	nīr
ayu		ylog	kiáng	ka-wa, ga-wa	hā syōō
banaghen	dalan	daan	tàu lù	o-ho-tsi	kīr
	ratacao	lupig	tà kie	noo-soom i-si	tŏ tsōk tsīr hăr
la mot		ogat	kan	ne	pōōr hōōī
		pisi, lubir	làn	tsoo-na	nŏ
		dorog	fú	ta-da-re	sōk koŏr
madeder		mabilog	yuen	msr' ki	toōng kōōr
	mapalagan	tacbo	pàu	ha-sir	tăr oŏr
		tinaday	wan tàng	ya-soo-si	p'hōn har
bidar	layak	layag	shí	ho	tŏt
asin	asin	asin	yen	si-wo	sŏ kĕm
		camucha	tung	o-na-zi	kān kā tsī
auai		bohangin	shá	soo-na	mŏ rē
		tubos	kúi	soo-kfoo-oo	koō wōn

English.	*Spanish.*	*Malay.*	*Bisayan.*	*Sooloo.*	*Iloco.*
Sea	mar	lāūt	bagat	laou ood	taào bay bay
See	ver	liat	mag tanao	pangatood	panangquita
Seek	buscar	chārī	mangita		panagsapul
Sell	vender	jūal	mag baliguia	mugbi	panaglaco
Send	despacher	panggil		parah	
Serpent	serpiente	ūlar		haas	
Sew	coser	jāhit	mag tahi	nann hi	panagdait
Shallow (a)	baxio	tohor		hab o bo	
Shape	hechura	rūpa		daagboos	
Ship	buque	kapal	sacayan	kapal	sasacayan
Short	corto	pendek		pan dàak	
Show	mostrar	mengajar		tonjok	
Shut	cerrar	tūtup			
Sick	enfermo	sākit		sakit	
Silent	callar	berdīam	mag hilum	du hoom	panagulimec
Silver (to be)	plata	pērak	pilak	pirak	pirac
Sister	hermana	sudara perampuan	igsuon nga bay	tai maughood babai	capsat a babai
Sit	sentarse	duduk	mag lincud	ning cood	panagtugao
Slave	esclavo	buaak			
Sleep	dormir	tīdor	mag tulog	ma toog	panna turug
Slow	lento	lalei		ma la lai	
Small	pequeno	kechil	dictai	asibi	bassit
Softly	blandamente	perlahan	mahinay		natutor
Some	algo	bārang		tiu tiu	
Son	hijo	anak laki laki	anac nga lalaqui	anak oosoog	anac a lalaqui
South	sur	salatān		sä atan	
Speak	hablar	kata	mag pulong	bailah sui sui	panagsao
Stand	pararse	tegga		too min dig	
Star	estrella	bintang		bi too oon	
Stay	esperar	nanti			
Steady	firme	tagoh, tatap		tatap	
Stomach	estomago	ampadal		lungan lungan	
Stone	piedra	bātu	bato	batu	bato
Stop	detener	nanti		doo hoom	
Straight	derecho	betul	matulid	tulid, boon tool	nalinteg
Strong	fuerte	kunsit		basoag	
Sugar	azucar	gnla	sucar		azucar
Sun	sol	mata āri	ad lac	mata sugah	init
Sweet	dulce	mānis		mai mooh	
Sword	espada	pedang		pudang	
TAKE	tomar	ambel		kawahoon	
Tall	alto	tinggi		malaas, mang kau	
Tame	manso	jīnak		aad-lah	

Batan.	*Cagayan.*	*Tagala.*	*Chinese.*	*Japanese.*	*Korean.*
taro, idaoor	bebay	dagat	hái	oo-mi	pā tă
mabuya	ng singan	quita	kien	mir	pŏr
chitaghin	pagalec	hanap	tsin chôh	tats'-noor'	nŏ
maypadit	malacu	bili	mài	oor'	p'hăr
		lapas	kí	yar'	pŏ nāīr
		ahas	yi tiáu shié	hey ni	paī yām
	malutu	tahi	fung	noof'	hŏr
		mababao	tsien	a-sa-si	yōt t'hoōr
tatan		pagca	hing siàng	ka-ta-tsi	ōr kōōr
sacayan	barangai	balangay	yi chi chuen	foo-ne	pāī
		maicli	twàn	mi-zi-ka-si	tsyō roŏr
ununung		toro	pí kán	a-ra-was'	kă ră ts'hīr hoom
		pinir	yen mun	to-dsoor'	tā toŏr
madumi		masaquit	yú ping	ya-ma-i	py-ōng
	ari mapua	tāhimic	me	mokf'	tsăm tsăm
pilak	pira	pilac	pe kin	gin, si-ro-ga-ne	oŏn
	vagui a babai	capatir na babayi	toz'	imo-oo-to	măt noō oōi
	magui tubang	locloc	tso'	soo-war, za	ān tsoŏr
pacho boten		bulisic	nú	to ra ha-re	tsyŏng nŏ
macoī icheg	maca turuc	tōlog	shúi	ner', ne-moor	nōō oŏr
cajay		marahan	mán	noor'-si	to tooīr
dekai	badi	munti	siáu	ko-ma-ka-ni	tsyō koōr
	matanay	marahan	tsiàu tsiàu	ta-ya soo-ki	yŏng yŏng
		balang	yú sié		hŏk
manganac	ana	anac nalalaqui	tsz' si	moos'-ko	ā toōr
draoh		tanghali	nán	mi-na-mi	nām myōk
misisirin	pagubobuc	pangusap	kiáng	i-oo, mo-no-i-oo	măr
		taban	chen	tats'	syōr
		bitoin	yi li sing	ho-si	pyōr
mabidin		hintay	chi si kien	to-mer'	poŏ t'hōr
		matibay	tó táng	tsoo-yo-si	
budec		sicmora	pí wei	i-nof'	yāng
batu	battu	bato	yi kwái shi	i-si	tŏr syok
mabidin		harang	chí, chú chí	to-do-moor	koŏ ts'hīr
	matunun	matouir	chi	na wo si'	kŏ toŏr
maghnii		malacas	yú li	tsoo-yo-si	sŏoīk sŏoik hăr
	issi	bulas	táng	sa-to-oo	syōr tāng
aroah	bilac	arao	ji	fi	nār
umuaunas		matamys	kan	a ma ki	tăr
		calis	táu	tsoor'-gi, ken	hwān tŏ
auaten, ajapuen		coha	tsù	tor'	ts'hyōoī hăr
		taas	kàu sau	ta-ka-i	nō p'hŏor
		maamo	yang shen liàu	na roor'	

English.	*Spanish.*	*Malay.*	*Bisayan.*	*Sooloo.*	*Iloco.*
Taste	gustar	me rāsa		kina man	
Tea	té, chá	teh		soog-ti toobig ti	
Teeth	dientes	gigi		ipoon	
Tell	decir	britau		na pamongan	
Tempest	tempestad	ribut	onos	ribut	baquio
Thank	agradecir	tarīma kāsih	dios mag bayad	dhili	dios ti humalis
That	aquel	ītu		ia oon	
The	el	itu			
Theft	hurto	pen-chūrīan			
There	alli	di sītu	didto	didtoo	dita
Thick	grueso	tabal		madak mool	
Thief	ladron	pen-chūri	cauatan	main dukao	mannanacao
Thirsty	sediento	āūs	uhao	oo haod	maoaoac
This (these)	este	īni		ini	
Throat	garganta	kūngan		li oog	
Tide flood	plena mar	pāsang nāīk		ta oot	
—— ebb	marea mengua	—— turun		laang hunas	
—— spring	aguas vivas	—— besar		tubig dăcola	
—— low	baxa mar	—— kring		hunas	
Tie (to)	atar, ligar	kabat	mag gacut	boo koo hae	panangreppet
Tin	estaño	tīmah		tangah putih	
Tired	cansado	pāyah	mabutlay		nabannugac
To (unto)	à	akan		ha	
Together	juntos	sāma sāma	uban		agcuyug
Tongue	lengua	lēdah		li lah	
Torment (to)	molestar	gaduh	mag sakit		panagunget
Travel	caminar	ber-jālan	—— panac	pano-oot	pannangna
Tree	arbol	pūhun	pono sa cahuy	pohun batang	kago
True	verdadero	benar		benal	
UNABLE	inhabil	tiāda būlih			
Under	debaxo	de bāwa		kabawah	
Understand	entender	meng artī		man oi mah	
Unfair	doble	korang betul			
Unfit	inepto	tiada patut			
Untie	desatar	buka			
Urine	orina	ayer kinching		tatou an, ihi	
VALOUR	valor	ka-barani-au	isug	magahah	tured
Vein	vena	urat darah		ugat mana hoot	
Victuals	viveres	makanan		ka oo noon	
Village	pueblo	dūsun, negri		parian	
Vomit	vomitar	muntah		muntah	

Batan.	*Cagayan.*	*Tagala.*	*Chinese.*	*Japanese.*	*Korean.*
taga man		tiping	cháng	na-mar'	māt pŏr
			chá ye	ts' ya	ts'hā
nipoon		ngipin	yà	ha, ki-ba	nī
bata		babala	káu	-oo	kŏ hăr
anin	bagui	bagyo	pàu fung	ha-ya-te	p'hŏ phŏōng
	mabalabalo	salamat	sié	on-wo ka-nz	syā rēy
iya		yaon	ná	so-re, so-no	koŏ
		ang	kí		
		daycot	tau sz'		tŏ tsōk tsīr hăr
	turi	doon	ná chú	ka-si-ko-ni	
		mabagal	hau	ats-si	toōt to ŏr
manacao	matacatacao	maguanacao	tse	noons' f'to	tŏ tsōk
cauao	mapangula	ohao	kóh	ka-wa-ki	kār hăr
		yari	tsz'	ko-re, ko-no	ī
lagao		liig	hau lung	no-do	in hoō
maneb		dagat laqui	cháu cháng háu	mi-tsi si-ho	tsyō syŏo
laguang		——— hibas	chàu tùi liáu	si-ho fi	hō yō tsīr
ca laguang		——— tagas			syōk syŏo
	panguipango	babat	pàng	moo-soob'	măĭt kyōr
		tingaputi	se	soo-zoo	tsyoō syōk
	mabanaga	pagal	kiuen	oom'	kăs păr
di		ay (fem), oy (m.)	chí	o-yo-i	nī ră
	cabulan gangan	sabay	tung tsai	to-mo-ni	hā ŏr
rida		di lah	she tau	si-ta	hyō
sumuli	mappo paray	douahagui	ki nàu	i-takf-se-mer'	pōn kī
managuey	lumacao	lacar	yú hióh	ta-bi-soor'	lŏ tsyōng
	kayu	cahuy	yi kan shu	ki, si-yu bok	nā mŏ
uyur		catotuhanan	chin shi	ma-ko-to	ts' hăm
		tongac	pu nang	a-ta-wa-noo	
		sulib	hiá	si-ta-ni	ā rāī
		malay	hiáu te	ga-ten-sur	ār
		maycana	pu kung tàu	foo ren ts'yokf	kō tsoŏt
			pu hòh yung	foo sa-oo wo-oo	
		calag	kiài kie	ho-dokf'	p'hōōr
puetec		yhi	niáu	s'aja-oo ben	ŏ tsŏm
		halga	yung	i-sa-mi	năr nāīr
uyat		litir	hiue kin	gets' m' yakf	măĭk
		laan	shi wu	ka-te	pān ts'hān
dequez aidi		bayan	tsun	moo-ra	swī kŏr
		suca	au tu	hakf'	t'hŏ hăr

English.	*Spanish.*	*Malay.*	*Bisayan.*	*Sooloo.*	*Iloco.*
WAGES	sueldo	gājī			
Wait	esperar	nanti		tagadkow	
Walk	pasear	berjalan		panokoh	
Want	necessitar	chita			
War	guerra	prang	gubad		gubat
Warm	caliente	angat, panas		passooh	
Wash	lavar	bāsoh		ma ma moos	
Water	agua	āyer	tubig	toobig	danūm
—— fresh	—— dulce	—— tawar		—— matabang	
—— sea	—— del mar	—— laut		—— dagah	
—— high	marea alta	pasang besar		—— dakola	
—— low	—— baxa	—— kring		hunas	
We	nosotros	kita, kæmi		kita, kami	
Weak	floxo	lemah		look mai	
Week	semana	jumàt		jumáat	
Weep	llorar	men-angis	mag hilac	menangis	panag sangit
Well	fuente	prigi		pisag	
West	poniente	bārat		a bag at	
Wet	mojado	bāsah	bassa	basah	nabasa
What	que	āpa		oo noo	
When	quando	apa-bīla	ano sa	bäng	ca ano
Where	adonde	māna		ha di in	
Which	qual	īang māna		ing ha di in	
White	blanco	pūtih	maputi	putih	napudao
Who	quien	siāpa		isiu	
Whole	todo	būlah			
Whose	de quien	siāpa pūnia			
Why	porque	meng-āpa	gna no ba	ma hi	apayapay
Wicked	malvado	jahat		mangi, jabat	
Wife	muger casada	bini, istri		bana, sawah	
Wide	ancho	lawas		ka bang	
Will	voluntad	suka			
Wind	viento	angin	tlangin	angin	angin
Wine	vino	anggōr	alak	ang goor	arak
Winter	invierno	musim dingin		musim haggot	
Wish	anhelar	chita			
With	con	dangan		dangan	
Within	dentro	de dālam	sa salud		uneg
Without	fuera	de lūar	sa guas		puar
Woman	muger	perampūan	babai, bai	babai	b'abai
Wood	madera	kāyū	cahui	kahoi	tari cayo
World	mundo	dunyā		dunya	
Worse	peor	lebih būruk	labing daiitan	mangi tood	dacdaques
Wound	herida	luka		paalih	
—— to	herir	meluka		pi ali hay	

Batan.	*Cagayan.*	*Tagala.*	*Chinese.*	*Japanese.*	*Korean.*
tandan		opa	kung yeo	sakf' re-oo	
nanagayen		hintay	hau	mats'	mōōr rī
		ligao	hĭng	yukf'	nēyr
		ybig	yàu	ho-tsoos'	tŏong yŏ
capayarap	bacal	pagbabaca	kiau cheu		
cuyat		mainit	nwàn	ata ta ka	tă săr
maybasa basa		hogas	sí	a raf	ōr tŏ
danum	danum	tubig	shúi	mi-dsoo	mōōr syoō
—— matabang				si mids'	
ta-oo		alat		si-wo mids'	syoō tsŏng
			shúi tá		tsyŏ syōō
			—— káu		syōk syōō
yamuen, sira-mo		cami	chin	wa-re-ra	ā toŏng
		mahina	jòh	yo-wa si	yāk hăr
		lingo	yi kó lí pái		
tumanis		tangis	hiá lui	nakf'	oōr
miun		bucal	shwang kwài	i-de	oō moōr
asdepan nu arao		calonoran	sí fáng	ni-si	syōs nyōk
		baysac	shi	noo-ree-te	tsō tsŏor
		gaano	shin mó	na-ni-wo	hā īr
amangu	cani	caylan	kí shí	to-ki-ni	hā sī
di nu		saan	ná lí	do ko-ni	hā ts'hyō
angou		alin	ná	i-ts-re	pā
maydac	mapurao	anaputi	pe	si-ro-si	hŏīn
angou, sinu		sino	shúi, shu	ta-re-ga	nōō kōō
		obus	tsung kang	mat-ta-si	tsyōn yōn
		sino	shí	ta-re-ga	nōo kōo
oontah paru	ng atta	baquit	wei hó	zi-yo ka	
		masamo	ngóh ti	war' si	mŏ tsīr
		bini biní	tsí	tsoo-ma	ān hāī
		maloang	kwóh	fi-ro ki	t'hoŏp
		loob	chí	ko-ko-ro sa-si	stoŏt tsī
salausao	padak	hangin	fung	ka-ze	pă răm
danum, asoy	vina ra'yang	alak tubig	tsiú	sa ke	soōr
		tagolan	tung	foo-yu	kyō oŏ
		ygaya	yòh	ne-gaf	wōn hŏr
		cay	yii	mot-te	tō poŏr
	lagum	loob	nui	oo-tsi-ni	ān
	lauan	loual	tsài wài	so-to-ni	pāt
mabaques	babagi	babayi	nū jin	o-na-go	kēy tsīp
binati, kayu	kayu	calap, cahuy	lin	ta-ki-gi	sōm
		sanglibutan	shí kiái	so-ka-i	īn kan
	curuga maracay	sama	kang pu háu	yo-ri war' kf'	mŏ tsīr
manganu, nuca		sugat	sháng chù		
manganuryun		sugat	sàng		

English.	*Spanish.*	*Malay.*	*Bisayan.*	*Sooloo.*	*Iloco.*
Write	escribir	tulis	mag sulat	yoo lis au	panag surat
Wrong	errado	sālah		sa-āh	
YEAR	ano	tāun		taun	
Yellow	amarillo	kūning	maraag	bi aning	amarillo
Yes	si	èyā	oo	oo, ipoon	oen
Yesterday	ayer	kalmari	cagahapon	ka-ha-koon, man	calman
You	usted	angkou		ikau	
Young	joven	mūda	olitao	bagoong batah	ubing
Your	vuestro	angkau pūnia		kanioo	

NUMBERS.

1	uno	satu	usa	isaio	meysa
2	dos	dua	duha	dua	dua
3	tres	tiga	tulo	tòo	tal lo
4	cuatro	ampat	upat	upat	eppat
5	cinco	lima	lima	lima	lima
6	seis	anam	u num	oon oom	innem
7	siete	tujnh	pitó	pi-too	pito
8	ocho	delapar	ualo	u-al-loo	ualó
9	nueve	sambilan	siam	si-am	siam
10	diez	sapuluh	napulo	hang-pooh	sangapulo
11	once	sa-blas	napulo ug-usa	ang potag-isah	sagapulo quet [meysa
12	doce	dua-blas	—— dua	—— dua	—— quet dua
13	trece	tiga-blas	—— talo	—— töo	—— tallo
14	catorce	ampat-blas	—— upat	—— upat	—— eppat
15	quince	lima-blas	—— lima	—— lima	—— lima
16	diez y seis	anam blas	—— unúm	—— oo-nòom	—— innem
17	diez y siete	tujuh blas	—— pito	—— pi-too	—— pitó
18	diez y ocho	delapan blas	—— ualo	—— ū al lo	—— oaló
19	diez y nueve	sambilan blas	—— siam	—— si-am	—— siam
20	veinte	dua puluh	calohaán	kow-haan	dua puloh
21	viente ydos	dua puluh satu, [&c.	calohaan may usu	kow tagisah	dua puloh quet [meysa
30	trienta	tiga puluh	kat loan	kát looan tagisah	tal lo pulo
40	cuarenta	ampat puluh	kapatan	kapatan	eppat apulo
50	cincuenta	lima puluh	kalıman	kai-man	lima pulo
60	sesenta	duam puluh	ka-nu man	ka-moo man	innem apulo
70	setenta	tujuh puluh	kapi toan	ka pi tooan	pito pulo

Batan.	*Cagayan.*	*Tagala.*	*Chinese.*	*Japanese.*	*Korean.*
	matura	sulat	sié	kakf'	ssoŏr
		himona	yú pu shí		koŏ roŏr
ano		ta on	yi nien	to-si	hnăī nyōn
nihahmah	nguila	dilao	hwáng se	ki-i-ro	noō roŏr
oon	uan	oo	shí	ha-i	ī
	cagabi	cahapun	tsòh jī	ki-no-foo	tsāk īr
mo		ycao	ní	o-ma-e	nō
canacan-a-tao		bagong tauo	sháu shí	i-tokf'-na-si	ŏ rīr
kamu		yuyo	ni ti	o-ma-e-no	

NUMBERS.

asa	tadday	ysa	chid	its'	hăn
dua	dua	dalaua	no	ni	toō
taddo	talu	tat-lo	sa	san	sok
apat	appa	apat	si	si	nok
dimah	lima	lima	go	go	tā săt
anam	anam	anim	lah	rokf'	yō soŏt
pitu	pitu	pito	chit	sits'	nīr kŏp
oo ah ho	ualu	ualo	pe	hats'	yō tărp
siam	siam	siyam	kah	kfoo	ā hŏp
asa poh hoh	mafulu	sangpouo	chap	zi oo	yōr
asa sicharua	kara taday	labin isa	chap id	zi oo its'	yōr hăn
dua sicharua	kara dua	—— dalaua	chap gi	zi oo ni	yōr toō
taddo sicharua	kara talu	—— tatlo	chap sah	zi oo san	yōr sōk
apat sicharua	kara appa	—— apat	chap si	zi oo si	yōr nōk
dimah sicharua	kara lima	—— lima	chap go	zi oo go	yōr tā săt
anam sicharau	kara anam	—— anim	chap lah	zi oo kokf'	yōr yō soŏt
pitu sicharua	kara pitu	—— pito	chap chit	zi oo sits'	yōr nīr kŏp
oo ah ho sicharua	kara ualu	—— ualo	chap pe	zi oo hats'	yōr yō tărp
siam sicharua	kara siam	—— siyam	chap kah	zi oo kfoo	yōr ā hŏp
dua poh hoh	dua fulu	dalauang pous	gi chap	ni zi oo	hăn yōr
asà si tehaddo	——— tadday	——— at isa	gi id	ni zi oo its'	toō yōr hăn
taddo a poh hoh	talu fulu	tat long pouo	ga chap	san zi oo	sōk yōr
apat a poh hoh	appa fulu	apat napouo	si chap	si zi oo	nōk yōr
dīmah a poh hoh	lima fulu	lima napouo	go chap	go zi oo	tā săt yōr
anam a poh hoh	anamafulu	anim napouo	la chap	rokf' zi oo	yō soŏt yōr
pitu a poh hoh	pitu fulu	pito napouo	chit chap	siz zi oo	nīr kŏp yōr

English.	*Spanish.*	*Malay.*	*Bisayan.*	*Sooloo.*	*Iloco.*
80	ochenta	delapan puluh	caualoan	ka ua luan	oalo pulo
90	noventa	sambilan puluh	kasiaman	kasi àman	siam apulo
100	ciento	sa ratus puluh	usa kagatos	hangutoos	sangagasut
200	dos cientos	dua ratus puluh	duha kagatos	dua hangootoos	dua nga gasut
1,000	mil	saribu puluh	usa kalibo	hangiboo	sang ariba
10,000	diez mil	salaksa puluh	napulo kalibo	salaksa	dua nga ribo
100,000	cien mil	saketi puluh	usa kagatos kalibo	saketi	sang agasat aribo

Batan.	*Cagayan.*	*Tagala.*	*Chinese.*	*Japanese.*	*Korean.*
ooah hoa poh hoh	ualu fulu	ualo napouo	pe chap	haz zi oo	yō tărp yōr
siam a poh hoh	siamafulu	siam napouo	ka chap	kfoo zi oo	ā hŏp yōr
	magatu	sang daan	chuppe	f ' yakf '	īr păīk
	dua gatu	daluan daan	no pe		
	marifu	isan libo	ching	sen	īr ts'hyon
	mafulu rifu	sampuong libo	chap ching		
	magatu tasifu	sang yota	checho		

POSITIONS OF PLACES DETERMINED IN THE VOYAGE.

Name of Place.	Latitude.	East Longitude.	Var.	Dip.
Ambong	6°18′26″N.	116° 15′ 33″	1°20′ 5″E.	0°34′12″N.
Anjer	6 3 30 S.	105 54 0	1 7 30 E.	26 48 0 S.
Apo Minor, Island East,	12 40 3 N.	120 24 0	0 8 42 E.	12 39 40 N.
Api Tanjong	1 56 36 N.	102 20 20		11 10 27 N.
Balambangan, S.E. Point,	7 12 0 N.	116 50 28		1 16 30 N
Banca Strait, S.W. Point,	1 46 24 N.	124 59 35	1 7 24 E.	
Batan, San Domingo,	20 27 26 N.	121 55 51	0 20 0W.	27 22 50 N.
Black Island, (Korea)	34 16 34 N.	127 13 26	2 24 10W.	48 15 56 N.
Bulungan, City,	2 48 39 S	117 17 25		
——— mouth (Sabanoon)	2 46 36 S.	117 40 33	0 30 27 E.	
Busoagon, E. Point, Calamianes,	12 15 29 N.	120 22 11	0 30 30 E.	12 8 25 N.
Cabras, see Goat Island,				
Cagayan (Sooloo)	6 58 4 N.	118 25 30	0 12 29 E.	0 56 50 S.
Cagayanes, Mindoro Sea, (N.E. Islet)	9 37 38 N.	121 18 53	0 44 28 E.	7 37 0 N.
Calusa „ „	9 35 53 N.	121 3 53		
Cargados Garajos (Cocos Island)	16 48 54 S.	59 30 43		50 11 15 S.
Crescent Island (Korea)	33 58 50 N.	126 51 40	3 10 32 E.	
Datoo Tanjong	2 5 24 N.	109 40 25	1 36 0 E.	
Disaster Island, (Japanese) E. Point,	29 40 6 N.	129 29 38	3 3 0W.	
Dumaran Island (E. Point.)	10 29 12 N.	119 53 8	0 24 34 E.	8 7 30 N.
Eden Island (Quelpart)	33 19 20 N.	126 4 56	3 14 0W.	
Fortune Island, Luzon,	14 2 45 N.	120 26 30		
Goat Island (Cabras), S.W. angle,	13 52 31 N.	119 53 4	0 28 15 E.	15 13 30 N.
Garza, Mindoro,	12 12 26 N.	121 9 16	0 38 8 E.	11 29 22 N.
Gunung Taboor (City)	2 9 59 S.	117 27 0		9 6 0 S.
Haddington, Port, (Meia-co-shimahs)	24 25 0 N.	124 1 53	1 3 0W.	33 43 0 N.
Hong-Kong	22 16 27 N.	114 8 33	0 37 20 E.	30 50 30 N.
Hoa-pin-san (N. face)	25 47 7 N.	123 25 44	2 8 6W.	
Ibugos, Batanese,	20 19 27 N.	121 46 35		
Keeling, Direction Island,	12 5 31 S.	96 51 38	1 23 20W.	38 55 7 S.
Kuching, Sarawak,	1 33 23 N.	120 21 33	1 28 5 E.	10 55 12 N.
Kulassien (Sooloo Sea)	6 24 48 N.	120 34 52	0 46 9 E.	0 42 25 S.
Labuan, Roosoocan,	5 12 5 N.	115 5 24	1 16 32 E.	
Ligitan (Sand Island)	4 19 9 N.	118 30 30	0 45 3 E.	4 55 0 S.
Luban, (Looc Bay), (E. side)	13 43 48 N.	120 13 56	0 39 0 E.	

Name of Place.	Latitude.	East Longitude.	Var.	Dip.
Lundu mouth	1°41′42″N	109° 51′ 26″	1°28′41″E.	10°37′55″N.
Loo-Choo, Napa, (Abbey point) . .	26 12 20 N.	127 35 57	1 35 36 W.	36 13 20 N.
Mantanani (I. Borneo)	6 43 0 N.	116 20 21	1 37 40 E.	0 12 17 N.
Moratabas (E. ent. Sarāwak) . . .	1 38 49 N.	110 29 47		
Maratua Island	2 15 9 S.	118 29· 0		
Macao (landing-place, fort,) . . .	22 11 10 N.	113 30 18	0 34 50 E.	30 41 0 N.
Morotabas Point, Sarāwak, . . .	1 38 50 N.	110 30 21		
Moarra, Borneo Proper, ...	5 0 22 N.	115 8 29		3 10 33 N.
Manila	14 35 7 N.	120 55 16	0 47 56 E.	16 24 0 N.
Magnignin	11 36 10 N.	121 39 57	0 45 20 E.	10 29 0 N.
Manado Tua	1 39 48 N.	124 35 7	1 0 0 E.	
——— town	1 30 22 N.	124 43 10	1 1 56 E.	10 21 31 S.
Mauritius	20 10 30 S	57 29 25	11 30 0 W.	52 47 15 S
Meyo Island	1 21 4 N.	126 16 37		
Nangasaki (Fishn. Island)	32 43 32 N.	129 43 53	2 35 89 W.	45 6 2 N.
Pigeon Island, Billiton, ...	2 37 5 S.	108 11 44	1 56 25 E.	19 48 7 S.
Pierre, S. Island, (China Sea) . . .	1 51 44 N.	108 38 33	1 34 26 E.	
Premier Reef, Pulo Panjang, . . .	2 30 12 S.	118 1 30		
Pantai (Curan, E. Borneo,)	2 2 16 S.	117 46 2	0 46 3 E.	
Panagatan, or Cambden Shoal, . .	11 50 40 N.	121 16 14	0 15 35 E.	10 57 30 N.
Pa-tchung-san, Port Providence, . .	24 21 20 N.	124 10 5		
——————— Haddington . .	24 25 0 N.	124 1 53	1 3 0 W.	33 43 0 N.
Pinnacle Island (Japanese)	29 51 48 N.	129 48 12	0 35 50 W.	44 80 18 N.
Pirate Island, Gilolo, ...	0 21 31 N.	127 28 15		
Pulo Tanjong (reef)	1 43 50 N.	110 29 30		
Pasanhan (Basilan)	6 42 22 N.	121 52 23	0 50 0 E	
Quelpart, Beaufort Island, ...	33 29 40 N.	126 53 4	2 30 33 W.	46 52 55 N.
River's Point, Celebes, (Slime Island)	1 20 24 N.	120 41 37	1 1 3 E.	10 46 8 S.
Salleolookit (Sooloo Sea)	6 40 52 N.	121 21 48	0 17 20 E	0 17 40 N.
Samarang Island (Sooloo Sea) . . .	5 28 18 N.	120 12 50	0 40 0 E.	1 55 4 S.
Samboanga town, Vigia, ...	6 54 55 N.	122 2 32	1 12 0 E.	1 27 25 N.
————— watering-place	7 1 17 N.	121 51 2		
Singapore (flag-staff)	1 17 0 N.	103 50 47	0 33 0 E	12 40 31 N.
Samatan river (mouth)	1 49 17 N.	109 48 27	1 30 0 E.	
Samasana (N. point)	22 38 20 N.	121 25 38	0 19 32 W.	30 43 0 N.
Surf rock, (Samarang)	34 4 22 N.	127 15 25	3 2 2 W.	
Sooloo	6 3 11 N.	120 58 0	0 33 38 E.	1 47 5 S.
Sooladdé	5 51 22 N.	120 46 48	0 11 3 E.	

Name of Place.	Latitude.	East Longitude.	Var.	Dip.
Santubon	1°43′31″N.	110° 18′ 17″	1°30′ 0″E.	10°40′ 0″N.
Ternate (west extreme)	0 45 21 N.	127 11 0	0 40 30 E.	11 43 50 S.
Tia-usu	25 57 13 N.	123 37 6		
Tampassook river	6 25 38 N.	116 23 36	1 0 0 E.	
Ty-pin-san (S.W. bay)	24 43 35 N.	125 13 39	1 24 10 W.	34 3 56 N.
Unsang (N.E. Borneo)	5 17 17 N.	119 11 56	0 53 10 E.	2 33 53 S.
Y'ami, North Bashee, ...	21 4 56 N.	121 53 48	1 5 57 W.	
Y-na-koo, Meïa-co-shimahs, . . .	24 25 58 N.	122 55 34	0 30 34 W.	

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ENTRAL
OGICA

APPENDIX.

As it may be interesting to the friends of those engaged in the encounter with the Pirates off Gilolo, narrated in Vol. I. p. 135-45, the following list is appended:—

3rd of June—on Pirate Island.

Gig.—Capt. Sir Edward Belcher.
Mr. M'c Dougal, Mast. Assist.
Crew—four Seamen.

Second Barge. One six-pounder. One rocket tube.
Lieut. W. H. Baugh.
Mr. H. S. Hooper, Purser.
W. H. Browne, Mid. (now Lieut.)
Jos. H. Marryat, Naval Cadet.
Mr. Adams, Assist. Surgeon.
Crew fifteen—fourteen muskets—two fowling-pieces.

On action 3rd of June, 2 to 6, A.M., same force.

Second Division sent to punish the remainder.

2nd Barge. One six-pound. brass. Rocket-tube. Fourteen muskets.
Lieut. Heard.
Mr. Nuttal, Mast. Assist.
Mr. Adams, Assist. Surgeon.

1. Cutter. One three-pound. brass. Rocket-tube. Ten muskets.
Lieut. Baugh.
Mr. Robinson, Mid.
Mr. Ormond, Naval Cadet.
Crew eleven.

2. Cutter. One three-pound. brass. Ten muskets.
Mr. Loney, Master.
— M'c Dougall, Mast. Assist.
— Piele, Naval Cadet.

3. Gig.—Mr. Hooper as before.

These were sent to look after the five last engaged, and ten others which escaped to a creek.

ERRATA.

VOL. I.

PAGE 30, line 2, for " Musa," read " Muda."
.. 57, line 9, for " Williams," read Williamson."
Chapter III. for " Admiral Cecil," read " Admiral Cécile."
for " Alcade," read " Alcalde," throughout.
.. 70, line 4, for " Subtan," read " Sabtan."
.. 79, line 7, for " permission," read " submission."
.. 197, line 22, *et passim*, for " *Bèche*," read " *Biche*."
.. 198, line 10 from bottom, for " Robertson," read " Roberton."
.. 201, line 9, for " Housman," read " Hoosman."

VOL. II.

PAGE 16, line 19, for " matter," read " manner."
.. 79, line 21, for " vessel," read " vessels."
.. 100, last line to be transferred to foot of opposite page.
.. 118, line 6, for " five," read " fine."
.. 140, last line, for " have," read " has."
.. 262, line 9 from bottom, for " enabled," read " unable."
.. 270, line 8, for " fright," read " flight."

Travel – Eastern Archipelago

Eastern Archipelago – Travel